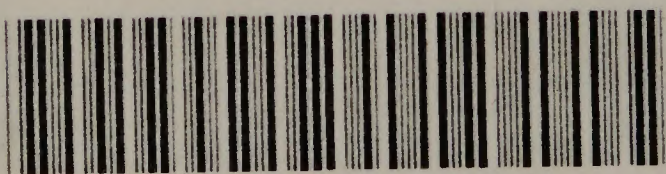
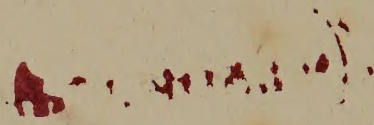




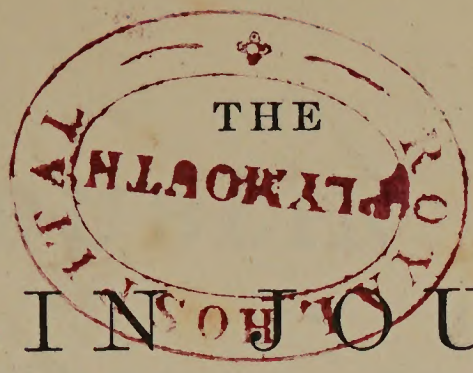
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JANUARY 1, 1883.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Report of a Case of Enteric Fever treated in the General Hospital, Madras.* By SURGEON-MAJOR HENRY KING, A.M., M.B.; Physician to the Hospital; Principal and Professor of Medicine, Madras Medical College.

SOME explanation is due when an ordinary case of enteric fever is offered for publication. In this instance there are two reasons for my hope that the case may be interesting—the first, that it demonstrates that genuine enteric fever can occur between the tropics as in the temperate zones, and that its victims are not necessarily young persons newly arrived in the country; the second, that it fixes, for one case at least, the period of incubation.

Sir Joseph Fayrer, in his recent valuable Croonian Lectures on Indian Climate and Fevers, states that he does not gather from any writings which he had seen by Dr. Gordon (late Surgeon-General of the British Medical Service at Madras), that this officer denies the existence of enteric fever, identical with what we know in this country, in India; but that he denies its pythogenic origin, and attributes it to climatal, probably malarial, causes. I think I may venture to say that a different impression prevails among medical officers in the Madras Presidency. It is a grim joke there that Surgeon-General Gordon had “abolished” enteric fever, partly by denying its existence, and partly by making its appearance in returns of sick exceeding troublesome to the diagnoser through the formidable official catechism to which it led. However this may be, few physicians in military or civil practice

in India could be found who would deny that both natives and Europeans are liable to a disease undistinguishable in its symptoms and in its lesions from the enteric fever of Europe. It may be, of course, that such cases arise from malaria or other climatal cause, independently of poisoning by putrefying animal excreta; but it is certain that, if they do, it is not in the absence of the other and ordinary source. However carefully barracks may be swept and garnished, the British soldier cannot walk through his cantonment, or stroll into the neighbouring village, without exposing himself to the recognised causes of enteric fever. It may be conceded that climate predisposes, but more than this is more than doubtful.

On the 11th of June, 1880, W. R., aged twenty-five, of European birth and parentage, was admitted into the General Hospital, Madras, for epilepsy. He had been under treatment in the hospital for the same disorder on several previous occasions; the last having been in 1874. He attributed the disease to the habit of masturbation acquired in England when he was twelve years of age. At that time the fits came on several times a day. He was benefited by treatment there, he states, and also in Madras, being admitted to hospital on his arrival from England. For six years past he has resided, without any particular employment, on the Shevaroy Hills (5,700 feet above sea level), and during this period the fits troubled him only about once a month. On the 9th inst. he returned to Madras, and on the 11th he had a fit. This and subsequent paroxysms were slight in character, and not preceded by premonitory symptoms. The attack is sudden, the patient falling, and coma follows. The circulatory, respiratory, digestive, and integumentary systems are in good working order. He complains of no pain, and sleeps well; but his intellectual power is obviously weakened. He sits in bed with a vacuous stare and finds difficulty in collecting his thoughts and in answering questions; these symptoms being more marked after the occurrence of a fit. He was ordered a purgative of castor-oil and turpentine, and put on milk diet.

Next day (12th) he had two fits—one at 10 a.m. and one at 7 p.m. He was put on bromide of potassium, ten-grain doses three times a day. On the 16th the dose of bromide was increased to fifteen grains, and from this date until the 21st no fit occurred. There was a slight one on the 21st; and then a free interval until the 28th, when two occurred.

The fits continued with similar occasional intervals. The dose

of bromide was increased to twenty grains on the 7th July, and to twenty-five on the 10th. On the 12th, extract of belladonna, gr. $\frac{1}{4}$, was substituted for the bromide; and there were no fits from the 15th to the 20th—an interval of six days. On the 24th the dose of belladonna was increased to gr. $\frac{1}{3}$; and on the 28th it was thought advisable to return to the bromide, in twenty-grain doses. On the 3rd August there were five fits—two severe ones by day and three milder at night. After this there was none until the 20th.

The recurrence of the attacks after an interval of nineteen days was attributed to exposure to the sun. *On the 20th* the patient obtained leave to go out to visit friends; and he walked from the hospital to a suburban village, distant about three miles, between 9 and 11 a.m. He returned flushed and weary, and had a fit at 9 o'clock that night. On the 24th there were two fits; on the 25th one; on the 26th none, but “his rest was disturbed owing to an attack of fever.” On the morning of the 27th August the temperature, hitherto normal, was 102.6° F. Diaphoretic mixture was ordered. In the evening the temperature was 101° . The progress of the case to its fatal termination will now be briefly noted:—

Aug. 28th.—Temp., 102.2° ; vesp., 104.4° ; slept fairly; bowels moved twice.

29th.—Temp., 103° ; vesp., 103.8° ; slept ill; was slightly delirious during the day; tongue slightly furred, brown; appetite good; bowels moved twice; ordered powder containing quinine, gr. 5, and pulv. antimon. gr. 3, *ter die*.

30th.—Temp., 103.2° ; vesp., 103° ; slept well; bowels moved once.

31st.—Temp., 101.4° ; vesp., 103.6° ; had a fit, lasting about five minutes, at 2 a.m.; slept well; no delirium; appetite good.

Sept. 1st.—Temp., 102.4° ; vesp., 105° ; a fit at 1 a.m.; slept well, without delirium; bowels not moved yesterday; tongue still slightly furred, brown; pulse, 112; ordered a seidlitz powder at once.

2nd.—Temp., 102.6° ; vesp., 104.4° ; no fit, but condition of patient improving; bowels moved thrice; slept well; takes food (milk and mutton broth) readily; pulse 100.

3rd.—Temp., 103° ; vesp., 104.4° ; reduced by a tepid bath in the course of the day from 104° to 102.2° ; pulse, 108; slept well; bowels moved twice since last report; complains of ringing in the ears; appetite fair; ordered eight grains of quinine in solution, instead of the powder, thrice daily.

4th. Temp., 103.8° ; pulse, 112; respirations, 28; bowels moved twice; tongue more furred and brown; slept well.

5th.—Temp. at 8 30 a.m., 104.6° ; at 9, after a tepid bath, 102° ; at 11 15, had risen to 104.8° ; fell, in a bath, to 99.2° , and was 100° at 12 5 p.m.; at 1 30, 105.4° ; at 4, 105° ; took his food (milk, broth, and some bread) and medicine; had a copious watery motion in the evening; had another bath at 7 45 p.m., temperature being 104.6° before it, and 103° afterwards; during the night bowels were moved five times; two-minim doses of tincture of aconite were given every hour, with a view to reduce the temperature; diet, milk, chicken broth, and brandy, ʒij .

6th.—Temp. vesp., 105° ; patient much worse; small red spots over chest, abdomen, and back; crepitation in right lung anteriorly; great tenderness in right iliac fossa.

7th.—Temp., 104° ; vesp., 105° ; bowels moved five times during the night; stools copious, watery, and yellowish; tongue thickly coated, brown; pulse, 116; ordered acetate of lead with opium.

8th.—Tepid bath at 8 30 a.m.; temp. before it, 104.6° , fell to 100° , rising to 101° afterwards; bath repeated at 2 30 p.m.; temp., 105° , reduced to 101° ; bowels moved eight times during the day. At 7 25 bath repeated, reducing temperature from 102.6° to 101° ; tenderness of abdomen continues, with tympanites; diet as before, with increased brandy.

9th.—Temp., 104.4° at 8 35 a.m., reduced by tepid bath to 101° at 9; bath repeated at 2 30, reducing temperature from 104.8° to 100° ; again at 7 p.m., with reduction from 105° to 99.6° ; pulse, 108; condition of abdomen and chest unchanged; tendency to bed sores.

10th.—Temp. at 10 a.m., 102° ; at 1 p.m., 104.2° ; at 9 p.m., 104.6° ; bowels moved once during the day.

11th.—Temp. at 8 a.m., 104° ; at 11 30, 101.6° ; at 1 30 p.m., 103.2° ; at 5, 104.6° ; temperature at 8 p.m., 101° ; at midnight, 100.6° ; at 4 15, 102° ; slept soundly; complained of pain on being moved; bowels moved several times, stools copious, dark in colour; sordes on teeth; acetate of lead powders (without opium) continued; chlorate of potassium, gr. 5, in decoction of cinchona, ʒij . every third hour; brandy, ʒvj .

12th.—Temp. at 7 40 a.m., 102.6° ; at 11 15, 104.2° ; at 2 25 p.m., 104° ; at 5 10, 104.6° ; at 7 45, 104° ; at 11 15, 102.6° ; at 4 15 a.m., 103.8° ; drowsiness during the day; diarrhoea continues; cough troublesome; spots persist; tenderness; gurgling, &c., as before.

It is unnecessary to continue the history of the case in detail. The patient died on the 14th at 11 25 p.m. The following are the most interesting points of the *post mortem* examination, made the morning after death :—

Head.—Nothing abnormal about skull or dura mater; pia mater congested; two small patches of relative softening, one in external aspect of right hemisphere, the other in left posterior lobe or inferior surface, neither diffuent under a stream of water; cerebellum unusually soft. *Thorax.*—Left lung deeply congested, especially lower lobe, of which portions were completely carnified; upper lobe crepitant, but exuding frothy mucus on section; pulmonary pleura of right lung roughened by recent inflammation; tissue not so congested as that of left lung; small puckered cicatrix in apex.

Abdomen.—No general peritonitis; some localised inflammation over cæcum and lower ileum; spleen weighs 9 oz., firm and normal; small intestines contain a quantity of pea-soup-looking fluid; a few scattered patches of hyperæmia of mucous membrane of jejunum and of upper part of ileum; lower down in ileum the membrane is deeply stained with bile, but otherwise normal until two feet above ileo-cæcal valve, where one of the solitary glands is much enlarged and infarcted with a cheesy-looking substance. For a few inches the mucous membrane is again normal, and then one of Peyer's patches is found in the same state as the solitary gland, except that the ulcerative process has extended nearly to the peritoneal coat; from this on to the valve are other patches and solitary glands in the same state of infarction and ulcerative inflammation, but none of the sloughs has separated; immediately above the valve the mucous membrane is throughout very hyperæmic, and the valve itself is covered with sloughing patches; about two inches of the large intestines hyperæmic. The restriction of the morbid lesions to the Peyer's patches and the solitary glands for two feet above the ileo-cæcal valve is very well marked. The mesenteric glands are only slightly enlarged.

From these notes, greatly abridged from the case as entered in the hospital journal by the clinical clerk, and from the pathologist's report of the autopsy, it appears :—

1. That the case was one of genuine enteric fever, with temperature rising to a maximum of $105\cdot6^{\circ}$ on the 22nd day; and fatal, without perforation, on the 19th.

2. That the period of incubation was six days, the patient having left hospital and gone into town on the 20th August, and having

exhibited pyrexia on the night of the 26th. In a hospital without a case of enteric fever in its wards, and in which there are no sewers, dry-earth conservancy being carefully carried out, it may be taken as certain that the patient did not contract the disease within its walls.

3. That the case was not one of a fever, resembling enteric, attacking a young European newly arrived in India, the patient having been six years in the country.

4. That there is no evidence of malarial intoxication in the case, the patient (though come from a malarious region) having been eleven weeks in hospital without a symptom of intermittent fever, and having given no history of previous attacks of malarial disease.

ARTIFICIAL FEEDING OF INFANTS.

DR. ARTHUR V. MEIGS has devised a new food with which he states he has attained very good success in as many cases as he has had the opportunity to try it. He says that it contains the same elements as are found in human milk, and in more nearly the same proportions than any other food heretofore recommended. It consists of two parts of cream, one of milk, two of lime water, and three parts of a solution of milk sugar of the strength of $17\frac{3}{4}$ drachms to the pint of water. The milk to be used should be good ordinary cow's milk, and the cream such as is usually sold in cities, and not too rich, containing about 16 or 17 per cent. of fat. The quantity of this food taken by a new-born infant should be two or three fluid ounces every two hours, and if it thrives it will soon take as much as a gill every two hours. The best way to prepare and use this food is to order five or six packages of milk sugar, containing $17\frac{3}{4}$ drachms each; the contents of one of these to be dissolved in a pint of water; and each time the child is to be fed let there be mixed together, and then warmed, three tablespoonfuls of the sugar solution, two of lime water, two of cream, and one of milk. This makes about a gill, and as much of it as the child does not take should be thrown out, and a fresh mixture made for the next feeding. The solution of sugar should be kept in a cool place, and at once thrown away if it sours, as occurs if kept more than a day or two in warm weather. The dry sugar keeps indefinitely, and is easily dissolved in warm water. A pint bottle should be kept for the purpose of containing the solution, to serve also as a measure of the quantity of water to be used with each package dissolved, and also to save further measuring.—*Med. News*, Nov., 1882.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Treatise on Diseases of the Liver, with and without Jaundice ; with the Special Application of Physiological Chemistry to their Diagnosis and Treatment. By GEORGE HARLEY, F.R.S. London: Churchill. 1883. 8vo. Pp. 1186.

THIS extraordinary work opens with a "prelude" on the subject of spelling. It appears Dr. Harley considers that the mental strain which children undergo, in trying to learn to spell, is so great, and causes so much injury, that it deserves to be looked on as a national question. In order to relieve this strain, and obviate the mental degeneration of the English-speaking nations, which is inevitable under the existing condition of things, Dr. Harley has devised a "Progressive Scheme of National Spelling Reform;" and he feels "that the social well-being of millions upon millions of the yet unborn must be materially influenced by the apathy or activity with which the question of Spelling Reform is handled in this the last quarter of the nineteenth century."

He had intended to write his *magnum opus* according to this scheme, and thus to show that his ears were open to "the wail of helpless children and the cry of their bread-earning parents;" but suddenly calling to mind that all his works are extensively read by foreigners, and fearing that they might find increased difficulty in deciphering a book written on the new system, he agreed to sacrifice his own people for the good of others, although with a "pang of regret."

We should not have noticed this absurd introduction if it did not, like the preludes to Wagner's operas, foreshadow the chief characteristics of the body of the work. It demonstrates, in the first place, the author's utter want of judgment and ignorance of the relative sizes of things in the world; and, in the second, his extravagant and overweening egotism.

In a volume of such an enormous size as this, dealing with a subject which is comparatively well circumscribed, we should have

expected a clear statement of the opinions which are at present held on the different diseases of the liver, together with some account of the literature of the subject. Then we should have had the author's own views, and the reasons why he differs from other physicians, put forward distinctly; and conclusive cases or experiments should have been given in support of his opinions. But we find nothing of this. The work is written in a rambling style of the most extravagant diffuseness. There is no review of the literature of the subject; no account of the views of other authorities; and the author's own views are so mixed up with digressions and praise of himself as to be frequently quite unintelligible; while, where we can understand them, they seem to us to be such as we should hardly expect a well-instructed nursetender to hold in this the latter end of the nineteenth century.

The worst taste, as regards the profession to which he belongs, is shown by Dr. Harley. From Sir W. Jenner and Dr. Murchison down to the most obscure general practitioners, we have recorded the names of gentlemen whose errors were exposed by the author by means of the profound science which he possesses, and by which he is able to "rend the veil" which obscures all the secrets of disease, and make the darkest parts of pathology "clear as noon-day." Even if Dr. Harley had really shown himself so superior to all his fellows, the way in which he parades it would have been unjustifiable; but there is very slight evidence of his having done so. His cases are recorded in such a slipshod, unappreciative way as to leave the reader in doubt as to who was right; and even if the right were with Dr. Harley, it was certainly not by any superiority in his scientific attainments, as we think our readers will acknowledge when we have given a few examples of the grotesque travesty which he is pleased to call modern science.

He attributes four functions to the liver—1. *A sugar manufacturing.* The liver forms not only grape sugar from proteids, but also sugar of milk, which is subsequently secreted by the mammary glands; but we are not told why this latter sugar is formed by the liver only in women, and during lactation.

"When, from any cause, the saccharine function of the liver is interrupted, and the transformation of albumen into glucogen, and glucogen into sugar, is interfered with, the hepatic cells get filled with glucogenous albuminoid materials, and the diseased condition of the organ known as 'amyloid' or 'albuminoid' liver, is the result" (p. 63). In speaking of amyloid liver (p. 1024), the author says that

the morbid deposit presents a closer “histological and chemical” resemblance to amylaceous matter than to anything else. Of the histological resemblance he says nothing more; of the chemical, it consists in starch giving a blue colour with iodine, while “amyloid” does so only after the addition of sulphuric acid, and in the fact of amyloid being “a true animal albuminoid,” while, we suppose, it is admitted that starch is a hydro-carbon. These seem to us to be differences rather than resemblances. On p. 1029 we read:—“Amyloid disease has the same *rationale* as fatty degeneration of the liver, the amyloid substance being nothing more or less than the transition stage in the physiological transformation of starch into sugar, and sugar into fat”—from which amyloid would seem to have no relation to albumen of any kind. Showing his acquaintance with the clinical features of amyloid disease of the liver, the author tells us that “the urine is generally loaded with urate deposits, is usually very scanty, dark coloured, and of high specific gravity” (p. 1028). After all this, it is somewhat amusing to be told that the disease should be treated on purely scientific principles.

The second function of the liver is a *fat-modifying one*. The fat is carried from the intestine into the blood by the lacteals, and thence reaches the liver only after it has undergone, in the lungs, the “direct oxidising action of the inspired air.” From an experimental physiologist like Dr. Harley we should have expected some proof of this direct oxidation of fat in the lungs, which is not usually admitted, but which, if true, would greatly influence our views on respiration. No such proof is given. Dr. Harley allows that the nature of the “finishing touches” which the oxidised fat undergoes in the liver is a mystery; but he has no doubt that the liver cells not only extract fat from the blood, and store it up in their interior, but that they also convert it into cholesterine. As the fat in the hepatic cells is not oxidised, it seems to us we must assume that a deoxidation occurs in the liver, but on this difficulty also Dr. Harley is silent.

“When, from some cause or another, the fat-modifying function of the liver becomes greatly disordered, the hepatic cells get choke-full of oil globules, and the diseased conditions to which have been given the respective names of ‘fatty’ and ‘lardaceous’ livers, are the result” (p. 65). Turning to the chapter on Fatty Liver, we read that it is no uncommon thing for a fatty liver to weigh 12 or 15 lbs. The diagnosis “seldom pre-

sents any formidable difficulties, from the fact that a big, painless, normally shaped liver, associated with a sluggish biliary function, is nearly certain to be the possession of the proprietor of a fatty liver" (p. 1021) !

Three classes of persons, we are told, are prone to have fatty liver—1. The overfed and obese. 2. Phthisical patients treated with cod-liver oil. 3. Women suffering from over-lactation. This last cause has grown in the author's imagination from De Sinéty's observation that nursing women (not those suffering from over-lactation) have fat in the liver cells. As to the second cause, the frequency of fatty liver in phthisis was observed long before cod-liver oil was introduced for the treatment of consumption. To the first cause the author attributes most of the cases of fatty liver—"Fully one-half of the patients I see with fatty liver kill themselves by over-indulgence in food and drink." As an example of the sort of evidence on which such statements are founded, we refer to the case, recorded on p. 1022, of a lady, who is not said to have over-eaten herself, but who came to Dr. Harley with a liver which he estimated to weigh 20 lbs. (!) He treated her by rigid diet, sulphate of soda every morning, and three times daily carbonate of ammonia, which he had found to cause pigs to emaciate very rapidly. The effect of this treatment was, that the lady's girth diminished from 64 to 47 inches, but of the measurements of the liver itself nothing is mentioned either before or after treatment, so that we can hardly avoid the suspicion that the case was complicated by ascites, the more so as the lady—"alas! for the credit of intellectual humanity"—gave up the treatment, relapsed into evil habits, and, after becoming prodigious, died. There was no *post mortem*.

The treatment of fatty liver is the same as that of amyloid (!)—avoidance of carbonaceous food, exercise and baths, together with sulphate of soda and carbonate of magnesia.

What the author means by "lardaceous liver" we do not understand. On p. 65 it is said to be the condition in which the liver cells get choke-full of fat globules, while on p. 1024 it is said to be the same as amyloid liver.

In the chapter on gall-stones we read a great deal about cholestérine. It is a fat. It is formed in other parts of the body than the liver, but here it is formed by the direct transformation of fat; particularly bacon fat, and of carbohydrates. It gives "a play of prismatic colours" with sulphuric acid; and if iodine be then added

the play is repeated in a still more beautiful manner. Nothing is easier than to prevent the formation of gall-stones—all that is necessary is to restrict the carbonaceous articles in the patient's diet and to give him alkalis. These promote the secretion of bile acids, which dissolve the cholesterine as it is formed. Even gall-stones which are already formed may be dissolved, so that the patient with firmly-impacted concretions need not despair—but by alkaline carbonates, benzoate of soda, and belladonna, to dilate the bile ducts, may look to recover and live to be seventy-four.

The third function of the liver is *a calorifying one*. How the heat is generated in the liver is described in the following paragraph, which we may quote as an example of the author's scientific style:—"This (the high temperature of the liver) is due to no peculiar or specific form of vital action going on in it, but solely and merely the direct consequence of the number and variety of the transforming, modifying, and assimilating chemico-physiological processes which occur in the hepatic cells being attended by the absorption of oxygen and the liberation of heat in a free state" (p. 66).

The fourth function of the liver is the *formation of bile*. Bile is said to be composed of (1) "*Biliverdin*—a green, nitrogenised, noncrystallisable colouring matter, *analagous to the green colouring matter of the leaves* and other green parts of plants, and, like it, leaving on incineration—as I was the first to show (1852)—a distinctly ferruginous ash. This bile-colouring matter appears, like urohæmatin and *all other animal pigments*, to be a direct derivation by simple oxidation of the colouring matter of the blood." ^a

Throughout the book biliverdin is spoken of as the only colouring matter of the bile. Bilirubin, a substance which crystallises, and has been analysed by competent chemists, and is universally admitted to be the origin of the other bile pigments, is never once mentioned. Admitting that it does not exist, we think Dr. Harley might, at all events, have mentioned the date at which he had disproved its occurrence. We should also like to have pointed out to us the analogy between chlorophyll and biliverdin. We should think that a similarity in function could scarcely be assumed even by Dr. Harley; chlorophyll has not yet been got pure; and against the presence of iron in biliverdin we have the unanimous opinion of physiological chemists, and Dr. Harley gives no analysis of his own. Something more would be desirable than a mere

^a The Italics are not in the original.

statement that bile pigment and all other pigments are merely stages in the oxidation of what the author calls hæmatin, and which is, we suppose, the substance that all other chemists call hæmoglobin.

Besides biliverdin, the bile contains (2) *Tauro-* and *Glycocholic acids*. The former is “convertible” by hydrochloric acid into taurine. The human body has also the power of converting it into cystin; of which statement we have no proof given. (3) *Cholesterine*, “a fatty matter.” (4) A brown substance, resembling shoemaker’s wax, to which the author long ago gave the name of *hepatic resin*, “not knowing what else to call it,” and which scientific term he still retains. (5) *Sugar*.—He found in dog’s bile, twenty-four hours after its removal, torulæ, “which were, of course, *the product* (!) of the fermentation of the sugar contained in the bile.” (6) Inorganic matter, “consisting chiefly of soda, potash, and iron.” Truly an admirable analysis!

Passing to the physiology of the secretion of bile, the author maintains stoutly that this process is, like the secretion of the saliva, immediately under the influence of the nervous system. He adduces, as proof of this, the fact, observed by Bernard, that in dogs with biliary fistula the discharge is more abundant when the animal is caressed; and an observation of his own, where, in a dog, the secretion was diminished after the animal had been struck on the head; and he holds that the secretion of bile may be completely suspended for an indefinite time by what he calls “ennervation,” or want of impressions reaching the liver by its nerves.

There can be no doubt that the rapidity of secretion of bile varies at different periods; but, notwithstanding all the efforts which have been made in this direction, no one has yet demonstrated any effect on the liver due to nerve section or stimulation beyond those which can be explained by modification in the supply of blood, or in the movements of respiration. If Dr. Harley had given this demonstration he would have conferred a real service on physiology; but, as no such demonstration is forthcoming, we think the very weighty superstructure which he builds on such an insecure foundation as the influence of the nervous system on the secretion of bile is likely to tumble about his ears.

The section on the uses of bile in the animal economy is chiefly remarkable for the note to p. 85, where the reader is modestly referred for all information on the chemistry of digestion to the author’s article in the *Brit. and For. Quart. Rev.* for 1860! So

we may conclude that twenty-three years ago the physiology of this important subject came to an end.

As an example of the author's clearness of ideas as regards physiologico-chemical subjects, we may allude to his explanation of why some African savages drink bile. It is in order to get soda, just as cattle go to salt licks to get chloride of sodium. From which it would appear that soda is all the same whether it is taken as chloride or glycocholate.

In the chapter on the "Etiology of Jaundice" the author reiterates the theory which he has put forward in other works—namely, that jaundice may arise from two classes of causes. In one, bile is secreted, but is reabsorbed into the blood from some part of the bile passages. This is the commonly-recognised form of jaundice, and is called obstructive jaundice, as it is due to some impediment in the way of the free discharge of bile into the intestines. In the other case, jaundice arises from the inactivity of the liver, which separates either not at all, or imperfectly, the biliary constituents from the blood. This, of course, presupposes that these constituents exist in the blood and are merely separated by the liver. This, Dr. Harley holds, is true for the pigment, but not for the bile acids. These latter are formed by the liver, and consequently do not accumulate in the blood when the functions of that organ are suppressed. This is jaundice by suppression—a condition not usually admitted by pathologists. In jaundice by obstruction, bile acids as well as pigment are found in the urine, while in jaundice by suppression bile acids are absent.

There is no doubt that bile acids do occur in the urine in cases of jaundice, but they are always in very small quantity, and in many cases of unquestionably obstructive jaundice they are altogether absent. This, however, does not disconcert Dr. Harley, who, without hesitation, affirms that when obstruction has lasted a certain time the functions of the liver become suppressed, and then we have, as a natural consequence, a disappearance of bile acids from the blood and urine.

The negative results which have invariably been got in experiments on animals are completely ignored; while the remarkable case recorded by Frerichs—in which a patient with extreme fatty liver presented no trace of jaundice, although the gall bladder and bile ducts were quite free from bile—is explained by the hazardous assumption that, in consequence of imperfect oxidation in the system, no biliverdin was formed from hæmatin, and consequently

none could accumulate in the blood. It is not easy to confute a person who argues in this style, who heaps Ossa on Pelion in the shape of assumptions like these.

In order to raise his hypothesis of jaundice by suppression beyond suspicion, the author quotes from the *Path. Soc. Trans.* a case, by Dr. Moxon, of a man of extremely intemperate habits, who died with jaundice, complicated by hæmorrhage and head symptoms before death. There was found a stricture in the common bile duct. The ducts throughout the liver and the gall bladder contained colourless mucous fluid. "The liver, of normal shape, was large and finely lobulated, as if from cirrhosis." No account is given of the microscopic appearances.

This case, in our opinion, is far from supporting Dr. Harley's view. It is evidently one of hypertrophic cirrhosis, in which the obstruction occurred in the finer interlobular ducts. It is from these, and not from the larger ducts, that, under all circumstances, the absorption of bile is effected. The case, we may say, is looked on by Dr. Moxon (a very respectable authority on a pathological question) as one of obstructive jaundice.

Up to page 800 the author treats of all the affections associated with jaundice, or which he considers to be so associated; and on page 801 he gives a table showing the pathology of jaundice according to his view. A glance at this will show the reader the extraordinary medley of morbid conditions which are here brought together. It would be impossible for us to follow the author through his account of all these diseases, or to give one-tenth of the passages which we have marked, and which demonstrate his ignorance of the very rudiments of scientific medicine. We may refer our readers to his chapters on "Jaundice caused by Diseased Germs," as a specimen of what we do not think it is too hard to call the veriest nonsense we have ever read.

The author desires to be judged by his science. At the head of his title-page is the motto—"True science is the key to wise practice;" and from page to page he breaks into outbursts of self-laudation, and thanks God that he is not, as other men are, ignorant of chemistry, physiology, and pathology. Yet what shall we say of a chemist who does not know that the precipitate formed in the urine on the addition of ferric chloride consists of ferric phosphate (p. 204)?—of the vivisector of ten years' experience who is never tired of boasting of the experiments he has performed, and who ventures to draw such far-reaching conclusions from them as

the recommendation to stitch together the gall-bladder and duodenum after having touched these parts with caustic potash (p. 1111), and yet who confounds the sympathetic nerve and the pneumogastric (or, as he calls it, the eighth pair of cerebral nerves) in the neck of a rabbit (p. 433)?—of a physiologist who attributes the yellow colour of the skin in jaundice to an attempt on the part of the cells of the rete mucosum to eliminate the pigment from the blood (p. 122); who attributes unilateral sweating to hemiplegic *paralysis* of the excretory nerves; who attributes the enlarged spleen in cirrhosis to an attempt on its part to “do the work” of the liver (p. 469)?—of a histologist who maintains that the bile ducts have valves, although every anatomist has injected the bile capillaries from the common duct; and who speaks of solution of the walls of the blood corpuscles and discharge of their contents as if they were bladders full of fluid (p. 167)?—of the pathologist who states that the following six forms of cancer only are said to affect the liver—encephaloid, melanoma, fungus hæmatodes, epithelioma, sarcoma, and scirrhus, and who goes on to add other forms; who goes back to the theory of specific elements of cancer, and denies the malignancy of scirrhus, because it cannot be inoculated (p. 887)?—of a physicist who describes a spectrum in the following way: “Three characteristic absorption-bands and a disappearance of the rest of the spectrum, commencing in the blue lines between b and F” (p. 731), and who speaks of a waterproof bag as being a bad conductor of cold (p. 668)?—of a clinical physician who maintains that in albuminuria, due to disease of the kidney, the urine has invariably a specific gravity of less than 1010 (pp. 371 and 793)?—of the therapist who sets forth, among a long list of “more or less infallible specifics,” perchloride of iron in erysipelas, salicylate of quinine in typhoid, cod-liver oil in scrofula (although it does cause fatty liver—Rev.), and conia in nerve spasm, whatever that may be?

Such examples might be found in every page, but those which we have given show the character of the author’s claim to be considered a scientific man.

We have said that it is often difficult to follow the subject through the cloud of words and endless digressions, many of them of the most absurd description, such as that on the author’s champagne; and it would seem often as if Dr. Harley himself did not clearly know what he was saying, as he contradicts himself almost from page to page. We could give many instances of this. Thus

on p. 546 we read, that to suppose we can form an opinion on the number of gall-stones present in any case from the number of facets on one of the calculi, is utterly false; while on p. 652 exactly the contrary is stated. On p. 694 it is stated that hepatic and renal colics frequently occur in the same patient; but on p. 692 we are told that, when in doubt, we should inquire if there had been a previous attack, and, if so, the nature of this will decide the diagnosis. On p. 785 there is a drawing of altered (very much altered) hepatic cells and "connective tissue cells," which, we are told in the text, came from the epithelial lining of the ducts. And so on.

If we have written severely of this book, it is because we have travelled from Dan to Beersheba, and found nothing but barrenness. We have read the twelve hundred pages, and find not one which we can commend to our readers. We know nothing directly or indirectly of Dr. Harley beyond what is contained in this book and some of his other writings. But we can scarcely imagine anyone who could seriously suppose that such a book as this could impose on any reasonably well-educated medical man. We do not wish to be uncharitable; but the frequent and uncalled-for advice to practitioners to demand consultations with consultants "of the right sort," would look as if the book were intended to impress those who are not well educated, or capable of discriminating the true from the false, with a feeling of the author's supernal wisdom. It has indeed crossed our mind that this handsome volume, with all its bravery of type and binding, with its attractive title, and its long chapters on "Biliousness," is, in part, addressed to the non-professional public—a suspicion which is not allayed when we read:—"I am writing for the sake of poor patients quite as much as for the advantage of my medical brethren" (p. 868). This, of course, is ambiguous, and we give the author the benefit of the doubt.

Pestilentia in Nummis. Geschichte der Grossen Volkskrankheiten in Numismatischen Documenten. Ein Beitrag zur Geschichte der Medicin und der Cultur. Von DR. L. PFEIFFER und C. RULAND. Tübingen: 1882. Verlag der H. Laupp'schen Buchhandlung.

HISTORIANS and antiquarians acknowledge with gratitude the light thrown on obscure pages of political history by the minute researches of numismatists. It has been reserved for Drs. Pfeiffer

and Ruland to prove that numismatics can be usefully enlisted in the service of the historian of medicine and disease.

The authors of "*Pestilentia in Nummis*" describe in detail the numerous medals which have been struck from time to time since the sixteenth century in various cities of Europe to commemorate the different forms of pestilence which have successively afflicted mankind. We need not dwell on the numismatic details which form the greater part of the book, but it is only just to the learned authors to observe that these details appear to have been worked out with accuracy and conscientiousness. Some of the more remarkable medals are depicted in two beautiful photographic plates.

In addition to the formal description of the medals the authors give in a concise form much valuable information derived from written history concerning the origin and progress of the plague, black death, cholera, smallpox, and other epidemic diseases. Chapter III. gives an excellent summary history of the practice of inoculation in Europe and of its supersession by vaccination. It is a curious fact that inoculation was prohibited in Austria so early as 1803, thirty-seven years before it was forbidden in England. Jenner's great discovery was first published in 1798, and its value was so speedily recognised that by the end of the year 1800 upwards of 12,000 persons had been vaccinated with human lymph. Four medals were struck specially in honour of Jenner, and two in honour of his zealous disciple, Sacco, the apostle of vaccination in Italy, who himself vaccinated half a million of people in that country.

If there were any hope that argument would have effect on the anti-vaccination fanatics, they might with advantage have their attention drawn to our authors' remark that the victims of war, plague, and cholera itself are not so numerous as those of smallpox, and that, during the smallpox epidemic of 1868-73, this disease displayed its old malignity only in those countries where vaccination had not been introduced.

Space does not permit us to follow our authors in their interesting and suggestive observations on infant mortality, the pressure of population on the means of subsistence, and other topics.

Clinical Surgery. By Dr. TH. BILLROTH. Translated from the Original, and Edited, with Annotations, by C. T. DENT, F.R.C.S. London: The New Sydenham Society. 1881. 8vo. Pp. 518.

THIS work is an abridged translation of Professor Billroth's Hospital Reports, which consist of four volumes, and which relate his surgical experiences between the years 1860 and 1876. The world-wide fame of the author of these reports will in itself ensure the interest of every surgeon in these pages, and the views will be attentively perused of one whose skill and learning are equalled only by the heroic efforts he has made to deal with the most fatal and most formidable of surgical diseases.

Sufficient is already known of Professor Billroth's writings to make it unnecessary for us to go into the work in detail. Unlike most standard works on surgery, which treat exhaustively of each separate subject, here we find alone the personal experiences of the author. In many places the nature and different methods of treatment are detailed, but only in cases where the author is anxious to impress upon his readers his own especial views, or to discuss the relative merits of various methods of operating. Thus in treating of caseous lymphatic glands he says:—

“The prognosis in this complaint is, for many reasons, an unfavourable one. In the first place we must confess that we possess no specific to bring about resorption of the simplest, purely hyperplastic, glandular enlargement. Still less do we know of any remedy which can obviate caseation or suppuration. . . . If these caseating areas are once formed in enlarged cervical glands, my opinion is that they will not become absorbed. . . . In the therapeutical treatment the progress of time has found us all much more active; no one who has removed many such glands, and has convinced himself, as he probably will do, that more than 75 per cent. of them contain caseous deposits, is likely to be deceived as to the possibility of such glands becoming absorbed, nor will he imagine that they can disappear without leaving cicatrices. Bearing this in mind, the surgeon will more readily counsel operation in these patients; of course cases where other tubercular processes of the internal organs have been already diagnosed must be excluded. A further reason for advising operation is that such a proceeding is very rarely attended with any risk, and that the resulting cicatrices are, as a rule, less disfiguring than when the process is allowed to run its own course. Two different forms of operative measures may be adopted:—
1. The sinuses may be enlarged superficially with the knife, and the deeper parts with sponge or laminaria tents; then the thinned ulcerated

edges of the skin can be cut away, and the cavities scraped out with a sharp spoon, or else the surface of the wound may be destroyed with nitric acid, caustic potash, or liquor ferri, and the part left to heal up. . . . I must further remark that the surgeon should proceed boldly in scraping out and cutting away the ulcerated edges of the skin; the more the latter are spared the more ugly is the scar. Thinned skin, ulcerated on its inner surface and overlying caseous and softened deposits, should always be removed. I have always regretted it when I have only scraped out the ulcerated surface below, and have allowed such tissue to remain. If by good luck suppuration did not occur, yet the deeper part of the cicatrix became so prominent that the subsequent scar had a very unsightly appearance. 2. All the glands that can be got at may be removed. It need hardly be pointed out that caution is necessary in such operations. They are simple and easy of performance when the capsules are not too firmly united to the surrounding parts, and can be detached without cutting. Such operations, however, may cause anxiety to the most experienced surgeon, as he proceeds step by step with his knife, the more so if he is working in close proximity to the larger vessels of the neck; moreover, they may become very formidable by their long duration and loss of blood. . . . I almost invariably make my incision along the anterior or posterior edge of the sterno-mastoid muscle. . . . In four cases I divided the internal jugular vein between a double ligature, and no untoward results followed. . . . In operations about the cervical glands, as well as in dealing with those in the axilla, I make it a rule, if any small puncture be made in the wall of a vein, or if short branches be wounded, always to expose the vessels thoroughly, and divide them between a double ligature. I consider such a proceeding far less dangerous than the apparently less severe plan of ligaturing the side of the vein. . . . If the glands have been completely removed the patients are, in many instances, entirely relieved of their trouble in a week or two. Good results like this are not so uncommon, and are highly satisfactory when contrasted with the ordinary methods of treatment."

We have referred somewhat in detail to these views of Professor Billroth, relating to his own practice between the years 1860 and 1876, because we find in the *Centralblatt für Chirurgie*, No. 22, 1882, an article enunciating precisely similar views put forth by Dr. L. von Lesser of Leipsig, and which would seem to indicate that these special methods of treatment had first found expression in the Saxon town and not in the Austrian capital. The prominence given to this article in some of our English journals would suggest that the correspondents were not familiar with Professor Billroth's work.

In treating of the subject of bronchocele we find a great deal of original matter which is of great interest. The subject is discussed only from an operative point of view, and acquires special interest from the great experience the author has had in diseases of the thyroid glands. He divides bronchoceles into four classes:—(1) the diffused, commonly bilateral hypertrophies, which are vulgarly termed “thick neck.” This form, which is extremely common, and gives rise to no serious trouble, requires no operative treatment; (2) bronchoceles, which are circumscribed glandular hypertrophic tuberos adenomata, or cysto-adenomata; (3) pure cystic bronchocele; and (4) carcinoma of the thyroid.

Cystic bronchocele is the form which receives most attention, as being the one which generally calls for operative interference. Billroth recognises two varieties—one, which is composed of a single smooth-lined sac, secreting usually a dull yellow or brownish fluid of viscid consistence. This is developed by hyper-secretion in the separate vesicles of the thyroid gland, which then coalesce—sometimes they form in a single vesicle. The second have similar contents to the first variety, but they have a rough lining, and originate in the parenchymatous gland tissue. These cysts develop by mucoid softening in the swollen parenchymatous tissue. It is often a matter of great difficulty to diagnose cysts formed by softening, and a puncture with an exploring trocar is often needed to clear up the diagnosis, when only a little fluid may escape; more rarely the whole substance is converted into a greyish, granular, thick pulp, which usually calcifies in part.

The simple evacuation of the fluid by puncture in cystic bronchoceles is nearly always but a palliative measure, and is not very advisable, for severe inflammation may follow. In ten cases he adopted the method of v. Bruns and v. Chelius, jun.—*i.e.*, the cyst was laid open and its edges united to the skin. In parenchymatous bronchoceles he noticed some shrinking of the tumour after repeated puncture. This led him to try the effect of puncturing with a trocar and canula, and after withdrawal of the trocar to move the canula about in different directions, in the hope of converting a solid into a cystic growth. Though successful in one case, the result in others was not promising. The idea of injecting very dilute iodine into these semi-solid growths he has not attempted, “chiefly because the results of completely removing bronchoceles have in my hands become better and better.”

In pure cystic bronchoceles he has had great success with puncture

and injection of iodine. His method of procedure is as follows :— After puncture, half an ounce of tinct. iodi fort. (one drachm of iodine, dissolved in ether, to one ounce of absolute alcohol is injected and left in, and then a collodion bandage made of strips of gauze of a finger's breadth, soaked in collodion) is placed on the anterior half of the neck. Twenty cases so treated at Zürich were permanently cured. Sharp fever usually follows the operation, or iodism may occur. Gas often develops in these cysts. After operation, no harm comes of it, and it is best not to let it out, though some months may elapse before the effusion and the gaseous contents of the sac are absorbed. Bronchoceles, in which Prof. Billroth has employed extirpation, were of two kinds— (a) Bronchoceles causing little or no dyspnœa, and exclusively lying in the middle line of the neck, over the upper border of the sternum. (b) Bronchoceles, mostly unilateral, partly substernal, in which the symptoms of dyspnœa threatened to produce asphyxiation. Large prominent bronchoceles in people above forty years of age, with slight or no dyspnœa, should not be operated on just for the sake of appearance. Small bronchoceles, connected to the lower part of the thyroid in children and young people, should be more often removed, especially when their situation is such that the tumour might, with the increased growth, possibly entail some danger :—

“On carefully reviewing the results of my experience,” says Prof. Billroth, “I have come to the following conclusions with regard to the operative treatment of bronchocele :—Simple primary thyroid cysts may be radically cured by puncture and injection of iodine; this is the most sure and the least dangerous method. Cysts of this description may be recognised by their distinct fluctuation, and the cholesterine contained in the evacuated fluid. In secondary or softening cysts the fluctuation is seldom very distinct. The fluid escapes slowly; that which flows last is mixed with blood, and the walls do not collapse much. Such cysts were treated by incision, but the operation is scarcely less dangerous than extirpation. Bronchoceles, even of large size, situated in the middle line of the neck, and causing little or no dyspnœa, can usually be removed successfully, especially in women and girls. Much less favourable in its results is the operation for completely removing deep-seated substernal or unilateral bronchoceles, accompanied by a high degree of dyspnœa; even in cases in which the operation is immediately successful in saving life, the ultimate result is frequently unfavourable.”

In speaking of cancer of the breast, the author lays great stress

on early operation, and the importance of removing the whole gland and every suspicious nodule :—

“So long as surgeons are not convinced of the absolute necessity of this proceeding, and do not impress it on the laity, so long will the results of treatment fail to improve. Away with ointments and caustics; the one thing that can be of use in this disease is the knife in the hand of a skilful surgeon.”

The axillary glands, when they show any sign of being involved, must be completely extirpated. Severe secondary hæmorrhage from the veins is liable to occur. Formerly he used to control the venous hæmorrhage with tampons, while in the worst cases he tied the branches close to the trunk, or else secured the wall of the vein, and so partially tied the vein. Now he has given all this up. He has found it far less dangerous to place a double ligature on the axillary vein, and then divide the vessel between the ligatures. This plan is rarely followed by any œdema of the arm—a result which formerly was of very common occurrence :—

“I cannot ignore the fact,” he says, “that by our more modern methods of operating where the skin is preserved as far as possible, so as to induce the wound to unite quickly by first intention, recurrence seems to me to take place far more rapidly. Formerly I used to remove all the skin of the breast in my cases. It is true the wound often took two or three months to heal, but the subsequent results—as far as recurrence is concerned—were far more favourable.”

Many interesting cases of hernia are recorded, in which unusual symptoms or complications occurred. In operating for strangulated hernia, he formerly avoided, if possible, opening the sac. The injury to the peritoneum is now comparatively a matter of small moment; the real danger consists in septic infection of the peritoneum. Prof. Billroth has repeatedly satisfied himself that the sero-sanguineous faintly-smelling fluid, such as is commonly found in the sac in herniotomies, frequently contains bacteria. He has convinced himself of the septic properties of this secretion by the infection of a small wound on his own finger, and by the inoculation of a rabbit's cornea :—

“On this account I consider it, therefore, far better *to open the sac on all occasions*, to let out the fluid, and then to disinfect the protruding strangulated intestine by careful washing with carbolic acid. This should be done before the constriction is divided. The intestine should then be allowed to slip in, care being taken to avoid, as far as possible,

cramming it back, or pushing it too far into the abdominal cavity with the fingers."

In discussing the treatment of idiopathic vesical catarrh, the author gives little encouragement. He has occupied himself a good deal with the subject, and comes to the conclusion that, like that of chronic catarrh generally, the treatment of catarrh of the urinary passages is highly unsatisfactory :—

"The affection," he says, "appears to me as incurable as cancer or tubercle, and is only less dangerous in that it is not so rapidly fatal. Idiopathic catarrh of the urinary mucous membranes is connected with constitutional disturbances of which we know little. . . . I do not hesitate to say at once to these patients that I can give them advice by which their sufferings may be somewhat alleviated, but that I cannot cure them."

The means he has found most successful for keeping the urine acid, and thus preventing decomposition, is the internal use of benzoic acid. It has not so pleasant a taste as phosphoric or nitric acid, nor is it readily soluble in water; but, on the other hand, it is better tolerated by the stomach—sometimes even the appetite improves under its use. Moreover, it does not irritate the most sensitive or the loosest mucous membrane, while phosphoric acid turns the urine acid so quickly and strongly at times that it has to be left off; if continued, the vesical pains are much increased.

At the end of this work, in which every page bristles with observations of extreme interest, we find Appendix III., in which is described what is undoubtedly Prof. Billroth's greatest triumph—his method of excising the pyloric end of the stomach for cancer. This appendix is an abridged translation of an essay by Dr. Anton Wölfler, in which he details four cases, three of which were performed by Prof. Billroth, and one by Dr. Wölfler himself. In 1877, in a paper on "A Successful Case of Gasteroraphy," Prof. Billroth remarked that it would now be a short step to an operation for removal of cancer of the stomach. Two years later he pointed out that there was no insuperable obstacle to partial resection of the stomach on anatomical, physiological, or operative grounds; "it must succeed."

In 1878 Czerny and Kaiser experimented on a dog by removing the entire stomach. Not only did the animal live for a long time afterwards, but the weight of the body increased one half in the course of eight months.

Gussenbauer and von Winiwarter have shown that the pylorus is a favourite seat of cancer, and that the affection attacks the neighbouring organs comparatively late. Of special interest is the fact observed by Rokitansky, that cancer of the pylorus scarcely ever extends down the duodenum.

Of the four cases reported, one—that by Dr. Wölfler—was alive at the time the paper was written—*i.e.*, nearly three months after operation, and was then perfectly well, and able to take all kinds of nourishment without harm; no trace of recurrence had, up to date, been discovered. In another case—Prof. Billroth's first—the patient survived four months. To within a fortnight of her death scarcely any symptoms of indigestion were noticed. She succumbed to cancerous degeneration of the peritoneum and infiltration of the retro-peritoneal lymphatic glands. The third case died of inanition, with symptoms of great anæmia, on the eighth day after the operation. The cause of death was chiefly due to great dilatation of the stomach. The fourth case died the night after operation. The patient was very anæmic, and was much collapsed after the operation. In this case the cancer was attached to the pancreas.

Summing up the results of observations on these cases, the author says:—

“The diseases for which resection of the pylorus should be reserved are cancer and other rarely occurring tumours, ulcers of the stomach, and cicatricial stenosis. In ulcer of the stomach the operation will be especially indicated if the patient is unable to take any nourishment, or when the anæmia from the hæmorrhage gives cause for much anxiety. . . . This operation would only be difficult when the ulcer lies on the posterior wall of the stomach, and is adherent, as it would be, to the pancreas.”

Altogether, the book before us is one which will well repay careful perusal. The name of its author is enough to demand a special interest in it. It would be idle for us to further commend a work to those who are acquainted with its author's reputation. The New Sydenham Society have done well in giving us this volume.

Census of Ireland, 1881. General Report. Dublin: Printed by Alexander Thom & Co., for Her Majesty's Stationery Office. 1882. Quarto. Pp. 427.

IN the number of this Journal for August, 1881, we noticed the Preliminary Report of the Census Commissioners, and referred to

the organisation and arrangements for carrying out the great work of the Irish census of 1881. No time was lost by the Census Commissioners after the publication of that Report, for on the 26th September, 1881, the Census Book for the County of Carlow was issued, being the first number of the detailed series of reports. We might say that week after week from September, 1881, were issued reports in county after county and province after province, until the 21st of September, 1882, when the Commissioners concluded their work by presenting their General Report to his Excellency the Lord Lieutenant. The work has been completed in the short space of one year and a half as compared with about six years occupied in compiling the Census Report of 1871. We also gather from the estimates submitted to Parliament and from the statement of the Chief Secretary in the House of Commons that the cost was something like one half that incurred in 1871. The book before us is of a voluminous character, occupying 427 folio pages of letterpress, with maps and diagrams. This, however, is only the concluding portion of a work thus referred to by the Commissioners:—

“Some idea of the magnitude and variety of the work of the Irish Census may be formed when we state that statistics are given for over 70,000 separate places or areas, exclusive of small islands. Our volumes comprise over 4,600 pages of tables and letterpress, giving tables treating of area, houses (and out-offices), population, valuation, conjugal condition, ages, occupation, social condition, birthplaces, foreigners, religious profession, education, schools, agricultural statistics, agricultural holdings in relation to population, &c.; emigration; the blind, the deaf and dumb, the lunatic and idiotic; the sick and infirm; the Irish-speaking population.”

The work differs somewhat from that of 1871:—

“Part I. of the Census of 1871 consisted of books for each county and province. Similar books have been published on the present occasion, forming Part I. of the Census of 1881.”

“Part II. in 1871 consisted of two volumes—Vol. I., ‘Report on the Status of Disease,’ and Vol. II., ‘Report on Tables of Deaths.’ In 1881 the former has been incorporated with our General Report, while the information from which the latter was compiled was not collected, being now unnecessary.

“The General Report formed Part III. of the 1871 publications, but is Part II. of this Census. Compared with 1871 it includes not only the statistics of the sick and infirm, formerly published under the title of ‘Status of Disease,’ but the result of special inquiries into the population,

houses, &c., on agricultural holdings, and tables showing the occupations and social condition of the inhabitants of Dublin metropolis, the suburbs of Dublin, and the Dublin registration district, which have been already referred to."

It will be observed that most of the changes refer to matters which have a special interest for our profession. Prior to the establishment of a system of general registration of births and deaths and to the regular issue of the statistics of the Local Government Board, we had to trust to Census statistics alone for our knowledge of all these vital statistics upon which sanitarians rely for estimating the condition of health of the people. Thus at previous Census periods statistics of deaths and disease from the previous decades were collected, and the various epidemics which prevailed between Census periods were discussed, but now this has nearly all been a work of supererogation, and we find the Commissioners of 1881 have included only in their returns such statistics as are necessary to supplement those published by the present Government department.

Another advantage of the present arrangement is that the statistics concerning disease, &c., are brought into closer connexion with the statistics of the general population, and are, therefore, more available for practical purposes.

The questions discussed by the Commissioners are dealt with under the following heads:—1. area, houses, and population; 2. ages of the people; 3. civil or conjugal condition of the people; 4. occupations of the people; 5. birthplaces of the people; 6. foreigners; 7. the sick and infirm; 8. public institutions; 9. religious profession of the people; 10. religious profession and education; 11. Irish-speaking population; 12. emigration; 13. miscellaneous.

It would be out of place here to discuss in detail all the matters above referred to, but when we consider that our profession has to promote the "*mens sana in corpore sano*" it seems that almost all the points discussed in this Report touch the question of the health of the people, for have not morality (as dealt with under the head of religion), education, ages, occupation, house accommodation, public institutions, and accommodation for the sick, all to do with the public health? We shall take these subjects in turn as they come before us in the Report, and deal with them as far as our space permits.

We find that the Commissioners make special mention of the confusing variety of areas into which the country is divided for all sorts

of purposes. As they say, one of the great difficulties in dealing with Irish statistics is the multiplicity of territorial areas into which the country is divided. Of these there are six principal classes dealt with in the work of the Census:—

“1. *The Civil Division*.—Consisting of townlands, civil parishes, baronies, counties, and provinces, with cities of towns, and counties of towns.

“2. *The Poor Law Division*.—Consisting of townlands, electoral divisions, dispensary districts and unions.

“3. *The Registration Division*.—Consisting of townlands, electoral divisions, registrars’ districts, superintendent registrars’ districts, registration counties, and registration provinces.

“4. *The Police Division*.—Consisting of townlands, constabulary districts and counties.

“5. *The Judicial Division*.—Consisting of townlands, petty session districts, quarter sessions districts, and counties.

“6. *The Ecclesiastical Division*.—Consisting of ecclesiastical parishes and dioceses.”

The Commissioners make the very pertinent remarks:—

“We desire here to bring under your Excellency’s notice the great public advantage which would result in the compilation of Irish statistics, if the course inaugurated by the Local Government Board with regard to the electoral division boundaries were followed with respect to the boundaries of the sixty unions, which are at present divided, so as to secure that no union should extend into more than one county. This end could be attained either by the Local Government Board bringing the union boundaries into harmony with those of the existing counties, or, should this be found impracticable, by the alteration of the county boundaries by the Lord Lieutenant in Council, under the provisions of the Boundary Acts.

“If this were done, the county being a multiple of all the smaller denominations would be a convenient area for statistical purposes, as it would contain the details for groups of complete sub-divisions.”

We thoroughly indorse the recommendation of the Commissioners, and trust it may have with the authorities that due weight to which it is entitled. Nothing can be more absurd, confusing, and misleading than the great want of uniformity in administrative areas in Ireland, and indeed we might also add in England and Scotland.

Referring to the number and density of the population the Commissioners state that the reduction of the population so marked

in 1851, 1861, and 1871, is still in progress, though the percentage of decrease has been less in each succeeding decade; that for 1851 being 19·85, for 1861, 11·50, for 1871, 6·67, and for 1881, 4·39.

At the taking of the Census of 1881 there were in Ireland 5,147,836 persons, and 914,108 inhabited houses with an area of 20,194,602 statute acres, exclusive of water, but inclusive of 4,923,800 acres under plantation, roads, fences, towns, bogs, barren mountain, waste, &c.

The average number of persons to an acre in 1881 was ·25, in 1871 ·26, and in 1861 ·28, showing a decrease in the density of the population to each acre of ·01, as compared with 1871, and ·03 with 1861.

In 1881 the number of acres to each person was 3·9, in 1871 3·7, and in 1861 3·5; thus showing in each of these decades an increase of 0·2 in the number of acres to each person.

The average number of persons to each house is now the same as in 1871—viz., 5·6, while there were 6·3 persons to a house in 1851, and 5·8 in 1861, besides which there has been a general improvement in the classes of dwellings throughout the country.

As in each previous Census the houses were classified into four divisions, measured by the following quality:—1st, its extent as shown by the number of its rooms; 2nd, its quality, as shown by the number of its windows in front; and 3rd, its solidity or durability, as shown by the material of its walls and roof. If numbers be adopted to express the position of every house in a scale of each of these elements, and if the numbers thus obtained for every house be added together, a new series of numbers will be produced, giving the position of each house in a scale compounded of all the elements—*i.e.*, their actual state.

By an ingeniously devised form this system was carried out with mathematical accuracy.

The result is, that in the lowest of the four classes are comprised houses built of mud or perishable material, and having only one room and window; in the third a better description of house, varying from one to four rooms and windows; in the second, what might be considered a good farm house, having from five to nine rooms and windows; and in the first class all houses of a better description than the preceding.

The accommodation which the houses afford has also been arranged under four classes, viz.:—

“ First Class accommodation consisting of 1st class houses, occupied by one family.

“ Second Class accommodation consisting of 2nd class houses, occupied by one family, or of 1st class houses, occupied by two or three families.

“ Third Class accommodation comprising 3rd class houses, with one family each, or second class houses, with two or three families, or 1st class houses occupied by four or five families.

“ Fourth Class accommodation includes all 4th class houses, 3rd class houses with more than one family, 2nd class houses with four or more families, and 1st class houses inhabited by six or more families.

“ In 1881 the number of 1st class houses increased by 6,244 as compared with 1871, and by 11,311 with 1861, and the 2nd class increased by 41,127 as compared with the former year, and by 61,543 as compared with the latter ; while the total number of inhabited houses was reduced to 914,108 in 1881, from 961,380 in 1871, and 995,156 in 1861. In 1881 the 1st and 2nd class houses were 53 per cent. of the entire number, while in 1871 they were 46 per cent., and in 1861 42 per cent. In 1871 there were in Ireland 519,783, 3rd and 4th class houses inhabited by 534,274 families; in 1881 there were 425,140 houses of these classes inhabited by 431,119 families, showing a reduction of 94,643 houses, and 103,155 families in 1881, as compared with 1871. In 1861 there were 89,374 mud cabins, inhabited by 93,978 families, while in 1881 there were 41,025 families inhabiting 40,665 houses of this class, or a reduction in the latter year of 48,709 in the number of houses of the lowest class, and 52,953 in the number of families inhabiting same.

“ There is a very substantial increase in the number of 1st and 2nd class houses in both civic and rural districts on the present occasion. The total number of inhabited houses in the former increased during the decade by 8,235 or 4·6 per cent., while the number of 3rd and 4th class houses decreased by 8,528 or 20·05 per cent.

“ In the rural districts the total number of houses decreased by 55,507 or 7·11 per cent., and the number of 3rd and 4th class houses by 86,115 or 18·04 per cent.”

The foregoing is a satisfactory account of the improvement of the habitations of the Irish people—an improvement which, as it progresses, will do more than any kind of legislation to promote comfort, health, contentment, and morality.

Next follow many interesting details regarding the population statistics of counties and towns, which will be of great importance to the purely social statistician, when considering the means of subsistence of the occupiers of small agricultural holdings, and the condition of the poor inhabitants of great towns.

If the population of Ireland is reduced to a basis of one hundred thousand it will be seen that it was proportionately greater per 100,000 at the following ages in 1881 than in 1871:—

						1881.	1871.
5 and under 10 years,	-	-	-	-	-	12,020	11,688
10 „ 15 „	-	-	-	-	-	11,918	11,644
15 „ 20 „	-	-	-	-	-	10,807	9,829
20 „ 25 „	-	-	-	-	-	9,229	8,463
35 „ 40 „	-	-	-	-	-	4,858	4,706
40 „ 45 „	-	-	-	-	-	5,947	5,353
45 „ 50 „	-	-	-	-	-	3,808	3,620
65 „ 70 „	-	-	-	-	-	1,940	1,888
75 „ 80 „	-	-	-	-	-	909	775
80 „ 85 „	-	-	-	-	-	901	768

At the following age-periods it was proportionately less per 100,000:—

						1881.	1871.
Under 5 years,	-	-	-	-	-	11,137	12,080
25 and under 30 years,	-	-	-	-	-	6,399	6,971
30 „ 35 „	-	-	-	-	-	5,856	6,577
50 „ 55 „	-	-	-	-	-	4,760	5,195
55 „ 60 „	-	-	-	-	-	2,691	3,136
60 „ 65 „	-	-	-	-	-	4,350	4,720
70 „ 75 „	-	-	-	-	-	2,189	2,268
85 „ 90 „	-	-	-	-	-	164	184
90 „ 95 „	-	-	-	-	-	77	91
95 and upwards,	-	-	-	-	-	40	44

From the tables attached to the report it will be observed that the number of children under one year, in 1881, was less by 28,386, or 21 per cent., than in 1871, and that there was a decline of 48,948, or 9 per cent. in the number from one to five years. In 1871, as compared with the previous decade, the decreases only amounted to 3 and 7 per cent. respectively. This decrease in the number of children in 1881 is not due to a corresponding reduction in the population at the reproductive period adopted in 1871:—viz., from 20 to 55 years. In 1871, as compared with 1861, the decrease in this reproductive period amounted to 13 per cent., while in 1881, as compared with 1871, there was a decrease of but 4 per cent. A reference to the Registrar-General's Reports for 1880 shows that the Marriage and Birth rates for that year were exceptionally low—facts which go far to account for the very small proportion of infants under one year at the time of the Census. In the two following

quinquennial periods in 1881—viz., 5 and under 10, and 10 and under 15 years—there was an absolute decrease of 10,540 and 13,412 respectively—2 per cent. in each case—though relatively both of these age-periods are higher than in 1871. An increase is shown in the number of persons aged 15 and under 20 of 27,329, or 5 per cent.—6 per cent. in the males and 4 per cent. in the females; and in those aged 20 and under 25 there has been a decline of 19,552, or 4 per cent.—8 per cent. in the males, and only 1 per cent. in the females. This is borne out by the fact that in 1871 the age-periods in which these persons were then tabulated (5–10 and 10–15) exhibited an increase over 1861 of 3 per cent. and 5 per cent. respectively.

In the ages from 25 to 35 years there has been a decline of 98,967, or 14 per cent.—a decline almost equally distributed between the sexes—and in the following quinquennial period (35–40 years) there has been a decline of 3,261, or 1 per cent.—the males, however, having decreased by 4 per cent., while the females increased by 2 per cent. Between the ages of 40 and 50 there is an increase of 19,136, or 4 per cent., and this is borne out by the fact that in 1871 an increase was shown in the number of persons between 30 and 40. Between 50 and 55 comes a fall of 12 per cent.; between 55 and 60 of 18 per cent.; between 60 and 65 of 12 per cent.; between 65 and 70 of 2 per cent.; and between 70 and 75 of 8 per cent., while between 75 and 80, and between 80 and 85, there is an increase of 12 per cent. in each quinquennial period. The remaining age-periods show decreases as follows:—15 per cent. between 85 and 90; 18 per cent. between 90 and 95; and 12 per cent. at 95 and upwards.

Reducing the population of Ireland to a basis of 100,000 the general features are as follow:—

	1881.	1871.
Under 20 years - - - - -	45,882	45,241
20 to 55 „ - - - - -	40,857	40,885
55 years and upwards - - - - -	13,261	13,874

An advance is thus shown over 1871 in the proportionate number of persons under 20 years, notwithstanding the large diminution in the number of young children, and a corresponding decrease in persons 55 years and upwards, while the proportionate number of persons in the “reproductive period” adopted in 1871 is substantially the same as in that year.

It would thus appear that proportionately the effective population of Ireland has increased during the decade.

“Of the 1,611,034 males aged 15 years and upwards in Ireland, on the Census night, 818,632, or 50·81 per cent., were bachelors; 696,542, or 43·24 per cent., husbands; and 95,860, or 5·95 per cent., widowers. Of the 1,749,091 females of the same ages, 783,475, or 44·79 per cent., were spinsters; 712,525, or 40·74 per cent., wives; and 253,091, or 14·47 per cent., widows. The proportions here set forth compare unfavourably with those for 1871, in which year the unmarried males formed only 47·85 per cent. of the total, as against 50·81 per cent. in 1881, and the unmarried females only 42·38 per cent., against 44·79. Concurrently with the increase in the proportionate number of unmarried persons, there has been a fractional increase in the per-centage of the widowed, so that “husbands,” who, in 1871, formed the not high proportion of 46·33 per cent. of the males aged 15 years and upwards, do not on this occasion exceed 43·24 per cent., and the relative number of “wives” has fallen from 43·29 per cent. to 40·74. The quinquennial age-period exhibiting the greatest increase in the relative number of unmarried men is that from 30 to 35 years, the table (Table 82, page 239) showing that while, in 1871, bachelors constituted only 43 per cent. of the total number of males of that age, in 1881 the proportion had risen to 48 in every hundred. As regards spinsters, the greatest proportional increase is in the age-period 20 and under 25, the number in every hundred women having advanced from 78 to 82. The figures last quoted, and the fact disclosed by the returns that 93 in every hundred males aged 20 and under 25 years, and 71 in every hundred males aged from 25 to 30, were unmarried, *prove the infrequency of early marriages in Ireland.*”

The words we have Italicised are important coming from such high authority, and founded, as they are, on absolute facts. It is not long since an English public man spoke of the Irish as marrying at 18, and having a dozen children—a statement precisely opposite to the facts as here set forth.

We next come to the portion of the report relating to the “occupations of the people,” and we regret extremely to find the tables connected with the subject so arranged as to be scarcely intelligible. The classification of occupations is, we are happy to say, not the invention of the Irish Registrar-General or his colleagues, but was devised in England in 1871 and modified in 1881. We regret that the classification was not completely recast or abandoned altogether, and a simple alphabetical list substituted; therefore, we can best illustrate this by an extract from an article on the subject which recently appeared in the *Dublin Evening Mail*:—

“One or two examples will show what a farce these tables are. A fisherman is enumerated as an agriculturist; a peer and a vagrant are

classed together as 'following no specified occupation;' the Lord Lieutenant is bracketed in the same class as a billiard marker; Mr. Edward Guinness and the man who drives his dray are together; a farmer and a cat's-meat dealer are side by side; and the Librarian of Trinity College takes rank with a scavenger and a rag dealer."

In strong contrast with these unsatisfactory tables are those referring to the Dublin Registration District, compiled at the request of that useful body, the Dublin Sanitary Association. The following extract from the Commissioners' report will show clearly the nature of these tables of "Social Condition":—

"At the request of the Dublin Sanitary Association we were instructed by the Irish Government to compile statistics representing the social position of the inhabitants of Dublin. These tables deal with 346,693 persons constituting the population of the Dublin Registration District, and they vary in their structure from the occupation tables published in the County Abstracts, where the figures opposite each trade represent all persons belonging to it, whether masters, apprentices, workpeople, or clerks. In the tables now submitted we have distinguished between employers and employed. As the Family Return seldom afforded information on this point, we were obliged to judge the social status, taking into consideration the place of residence and the general character of the return, deriving what assistance we could from the Dublin Directory. The inmates of the two Workhouses in the city of Dublin are shown on the line 'Workhouse inmates' in this table; in the tables in the book for Dublin they are dispersed throughout the different orders in which their former occupations entitled them to be classified. Persons who returned themselves as having no occupation, and who, judging as in the case of employer and employé, were evidently in a humble position, we assigned to the line 'unspecified.' Those, likewise, whom we considered to be in a superior position we assigned to the line 'gentleman, gentlewoman.' With regard to students, in the county tables, all persons over fifteen years of age returned as 'student' or 'scholar' were tabulated as 'student.' In the tables now under consideration a different plan has been adopted. In boarding school returns the pupils of all ages up to twenty years were assigned to the column for children, opposite the line 'gentleman, gentlewoman,' when the circumstances seemed to warrant it; otherwise they were tabulated as children of persons represented by the word '*unspecified*.' A student or scholar living at home (under twenty years of age) and returned as 'scholar' or 'student,' was placed opposite the parent's occupation; but where there was no clue to social position, he or she was registered as 'student.' The numbers, therefore, given in these tables for the City of Dublin will

not in every case compare with those of the corresponding table of the Dublin book.

“In the Dublin Registration District there were 385 instances in which the age column was not filled in the Family Return; of these 323 were in the city. An inspection of the forms, however, enabled us to assign those persons to their probable age-periods.

“These tables require scarcely any explanation. On the left hand side are placed the bread-winners, and on the right, on the same line, are placed their dependents having no occupations. When the wife is earning, she is entered on the left hand. The term ‘gentleman, gentleman,’ comprises persons of rank, property, or respectable position, as well as retired officers of the army, navy, and civil service. Their sons and daughters following no occupation are, when over 20 years of age, also included.

“It does not follow that the persons represented on the dependent side are in every case actual relatives of the persons on the bread-winning side. For example, a person returning herself as ‘Solicitor’s wife,’ would naturally be placed on the dependent side opposite to ‘Solicitor,’ as she clearly derives her support from that profession.”

The importance of these tables to the vital statistician and sanitarian is too apparent to require any special remark. It is due, however, to Dr. Grimshaw to state that he brought this matter under the notice of the Dublin Sanitary Association several years ago, before he became Registrar-General. The Association did not forget the hint, and, by a curious turn of fortune’s wheel, it came to pass that the original author of the plan had himself the chief hand in carrying it out. We believe nothing of this kind has been attempted elsewhere, and we feel certain that the stratification of the population statistics into social groups, which is made possible by the “Social Condition” tables of the Dublin Census, will prove true and valuable standards for calculating death-rates, and for showing in what classes of society the “death-toll” is levied with the greatest severity.

In discussing the “Birth-places of the People,” the Commissioners point out what a large proportion of the population in some places do not reside in the counties in which they were born. Thus, in the county of Dublin only 61·9 per cent. of the population were born therein.

It would appear from the figures before us that the more advanced in civilisation the people are, the fewer of them were born in their place of residence. Thus, Wicklow has 41 per cent.

of persons resident therein who were not born in the county, and Mayo has but 3·8 per cent.

The proportion of foreign-born persons resident in Ireland would be of little interest to our readers, and indeed the foreign residents in Ireland are a comparatively small item in the many social problems which demand solution in this country.

The next section of the Report, which deals with the sick and infirm, demands the especial attention of our readers. The Commissioners, rightly looking at the question more from a popular than a professional point of view, have adopted a system of classification which is best described in their own words. Referring to the tables concerning the sick and infirm, the Commissioners say:—

“ These tables deal with two great classes of the sick—namely, those suffering from ordinary forms of illness, and those who are permanently disabled. The former are, for convenience of classification, termed the ‘temporarily sick,’ although many were, at the time of the return, suffering from incurable maladies. The other great class includes those afflicted by permanent and usually incurable maladies—such as deafness and dumbness, blindness, insanity, and idiocy.

“ This classification, although wanting in scientific accuracy, must be admitted as useful for practical purposes, and has the additional advantage of having been used in previous Censuses; and the results of the Census of 1881, thus arranged, are comparable with those of former Censuses, where this classification was adopted. The nosological classification adopted under the head ‘temporarily diseased,’ is that known as Farr’s; it was adopted by the Registrars-General of England and of Ireland until a recent date, when some modifications were introduced into the classification of the causes of death, as adopted in the publications of the English and Irish Registrars-General. Following the course indicated in the foregoing remarks, we find that the subject of the Sick may be most conveniently discussed under the following heads:—

“ I. The Temporarily Sick, comprising those suffering from various forms of disease not included under the other head.

“ II. The Permanently Diseased, comprising the deaf and dumb, blind, lunatic, and idiotic. A diagram (No. 9) has been constructed which presents to view the proportion to every 10,000 of the population labouring under the above infirmities.

“ The ‘Lame and Decrepit’ were separately dealt with in former Census reports, but experience has proved that a large number of those so returned were as useful members of society as those not suffering from any physical defect, and therefore, for all practical purposes, were

healthy people. Returns showing the number of the 'lame and decrepit' have therefore not been included in the present inquiry.

"*The Sick and Infirm of all kinds* on the Census night of 1881 numbered 71,328, or 1 in 73 of the whole population, against 71,612 in 1871. Of those in 1881, 40,090 were 'temporarily diseased,' and 31,238 'permanently diseased;' compared with 44,052 and 27,560 in 1871. Of the temporarily diseased in 1881, 17,805 were at their own homes; 4,170 were in infirmaries and general and special hospitals; and 18,115 in workhouse hospitals; compared with 23,838, 3,729, and 16,485, respectively, in 1871. It will be observed that the number of persons suffering from 'temporary' disease or its consequences was much less in 1881 than 1871, showing a considerable improvement in the general sanitary condition of the people.

"With the view of ascertaining how many persons were disabled by disease, a special return was obtained on Form C (see Appendix, p. 403) as to whether sick persons at their own homes were or were not able to follow their usual occupations. The results of this inquiry are shown in Table 94, from which it appears that of the 17,805 persons sick at their own homes only 235 were able to carry on their usual employments, thus for all practical purposes all were disabled. It is probable, however, that many persons suffering from trifling ailments were not returned as 'sick,' the popular test of sickness being inability to follow a person's usual occupation. The sick in hospitals and public institutions are assumed in every case to be debarred from following their usual occupations, and therefore no return of this kind was required from them."

The following analysis of the results tabulated in the report will be of special interest to our readers, and therefore we print it full:—

"ZYMOTIC DISEASES.

"*Smallpox*.—The number of persons returned in 1871 as suffering from smallpox on Census night was 122; in 1881 the number so affected was only 39—of this number 23 were in the province of Leinster (of whom 4 were in the Union of Dublin South, 8 in Rathdown, situated in the registration county of Dublin, 10 in Mullingar, county of Westmeath, and 1 in Drogheda, county of Louth); 2 were in the province of Munster; 11 in the province of Ulster, of whom 7 were in Belfast, 3 in Armagh, and 1 in Castleblayney (county of Monaghan); and 3 were in the province of Connaught.

"8 cases were at their own homes, 3 were in hospital, and 28 were in workhouses.

"*Measles*.—274 cases of measles were tabulated in 1871; in 1881 the number was 213, of which 72 were in the province of Leinster (there being as many as 22 of them in the Union of Naas, county of Kildare, and 19 in the Union of Thomastown, county of Kilkenny); 77 were in

the province of Munster, including the comparatively large number of 44 in the Union of Dungarvan, in the county of Waterford, 13 in Cork, and 11 in Nenagh, in the county of Tipperary; 23 were in the province of Ulster, of which there were 7 in the Union of Lisburn, in the county of Down; and 41 were in the province of Connaught, all of which were in the counties of Galway and Leitrim, the Unions of Clifden and Oughterard, situated in the former, having 13 and 22 respectively, and the Union of Carrick-on-Shannon, in the latter county, having 6.

“150 cases were at their own homes, 4 were in hospital, and 59 were in the workhouses.

“*Scarlatina*.—In 1871 the number of cases of scarlatina was 477, in 1881 there were 317; of the latter number there were 103 in the province of Leinster, of which there were 47 in the registration county of Dublin, and 28 in Kilkenny; 122 were in the province of Munster, distributed as follows:—9 in the county of Clare, 22 in Cork, 34 in Kerry, 13 in Limerick, 16 in Tipperary, and 28 in Waterford. There were 52 in the province of Ulster, of which 17 were in the county of Donegal and 16 in Londonderry; there was but 1 case in the county of Fermanagh, and there was not a case in the registration county of Monaghan; 40 cases were returned from the province of Connaught, of which 14 were in the Union of Dromore West, in the county of Sligo; the remaining cases were distributed pretty evenly throughout the province.

“244 cases were at their own homes, 52 were in hospital, and 21 were in workhouses.

“*Diphtheria*.—There were 7 cases of diphtheria returned in 1881; this disease was not specified in the tables for 1871.

“3 cases were at their own homes, 1 was in hospital, and 3 were in workhouses.

“*Whooping-cough*.—217 persons were tabulated, in 1871, under the heading of Whooping-cough; in 1881 the number of cases returned was 197, of which 17 were in the province of Leinster; 68 in Munster; 100 in Ulster (of which 29 were in the Union of Belfast, and 13 each in the counties of Donegal and Monaghan); there were but 12 cases in the province of Connaught, all of which were in the county of Mayo.

“112 cases were at their own homes, 5 were in hospital, and 80 were in workhouses.

“*Fever*.—In 1871 the number of persons suffering from fever on Census night amounted to 2,070; in 1881 the number of cases returned was 1,501, being 569 or 27 per cent. less than in 1871; of those returned in 1881 there were 371 in the province of Leinster, including 179 in the county of Dublin, 38 in Carlow, and 20 in Wexford; there were 549 in the province of Munster, of which there were 219 in the county of Cork, and 135 in Kerry; in Ulster there were 311, of which there were as many as 46 in the Union of Innishowen, in the county of Donegal, the

remainder being evenly distributed throughout the province; there were 270 in the province of Connaught, the disease extending in each county in proportion to the population.

“599 cases were at their own homes, 318 were in hospital, and 584 were in workhouses.

“*Diarrhœa, Dysentery.*—There were 467 cases tabulated under these headings in 1871; in 1881 the number so tabulated was 377, of which 61 were in the province of Leinster; 186 in Munster (including 61 in the county of Limerick); 75 in Ulster (of this number there were 21 in the Union of Castleblayney, in the county of Monaghan); and 55 in the province of Connaught.

“84 cases were at their own homes, 9 were in hospital, and 284 were in workhouses.

“*Cholera.*—There were 2 cases of cholera returned on the forms in 1871, and a similar number on those for 1881.

“*Rheumatism.*—In 1871 the number of persons returned as suffering from rheumatism was 3,331; on the present occasion the number so returned amounted to 3,500; there were in Leinster 1,093 cases, of which there were 472 in the county of Dublin; in Munster there were 837, a fairly proportionate number being returned in each county; in Ulster there were 1,039, the county of Donegal having the largest number in proportion to population; in Connaught there were 531, of which there were 179 in the county of Mayo.

“2,330 cases were at their own homes, 150 were in hospital, and 1,020 were in workhouses.

“*Other Zymotic Diseases.*—Under this heading there were tabulated, in 1881, 1,187 cases—the classification of diseases adopted in 1871 does not admit of a comparison with the number returned for that period. Of the 1,187 cases in 1881, there were 546 in the province of Leinster, of which number as many as 361 were in the county of Dublin; there were 338 in Munster, of which 170 were in the county of Cork and 89 in Limerick; in Ulster there were 236 proportionately distributed throughout the province; and 67 were in Connaught.

“273 cases were at their own homes, 618 were in hospital, and 296 were in workhouses.

“CONSTITUTIONAL DISEASES.

“*Consumption.*—The number of persons suffering from phthisis or pulmonary consumption, according to the Census returns for 1871, was 2,480; the number of cases returned on the present occasion was 2,624, of which 669 were in the province of Leinster; 658 in Munster; 959 in Ulster; and 338 in Connaught.

“1,821 cases were at their own homes, 169 were in hospital, and 634 were in workhouses.

“ *Other Constitutional Diseases.*—There were 1,988 cases tabulated under this heading in 1881 ; of this number 543 were in the province of Leinster ; 538 in Munster ; 665 in Ulster ; and 242 in Connaught.

“ 818 cases were at their own homes, 280 were in hospital, and 890 were in workhouses.

“ LOCAL DISEASES.

“ *Diseases of Nervous System.*—To this group of diseases the cause of illness in 4,009 instances was attributed, of which number 1,183 (including 580 in the county of Dublin) were in the province of Leinster ; 1,251 in Munster ; 1,024 in Ulster ; and 551 in Connaught.

“ 1,797 cases were at their own homes, 330 were in hospital, and 1,882 were in workhouses.

“ *Diseases of the Circulatory Organs.*—Contributed 853 cases, of which 258 were in the province of Leinster ; 268 in Munster ; 233 in Ulster ; and 94 in Connaught.

“ 509 cases were at their own homes, 74 were in hospital, and 270 were in workhouses.

“ *Diseases of the Respiratory Organs.*—6,744 persons, or 1 in every 767 of the population, were returned as suffering from these diseases on last Census night ; there were 1,846 of them in Leinster, or 1 in every 680 of the population ; 2,114, or 1 in every 636, in Munster ; 1,831, or 1 in every 960, in Ulster ; and 953, or 1 in every 857, in Connaught.

“ 3,898 cases were at their own homes, 339 were in hospital, and 2,507 were in workhouses.

“ *Diseases of the Digestive Organs.*—There were 1,437 cases tabulated under this heading, of which 396 were in the province of Leinster ; 323 in Munster ; 507 in Ulster ; and 211 in Connaught.

“ 722 cases were at their own homes, 176 were in hospital, and 539 were in workhouses.

“ *Diseases of the Urinary Organs.*—447 persons suffered from diseases of the urinary organs on the night of the 3rd of April, 1881, distributed according to provinces thus :—128 in Leinster ; 102 in Munster ; 169 in Ulster ; and 48 in Connaught.

“ 226 cases were at their own homes, 106 were in hospital, and 115 were in workhouses.

“ *Diseases of the Generative Organs.*—193 persons suffered from these diseases on last Census night ; more than one half (101) of these cases were in the province of Leinster ; 49 in Munster ; 35 in Ulster ; and 8 in Connaught.

“ 31 cases were at their own homes, 134 were in hospital, and 28 were in workhouses.

“ *Organs of Locomotion.*—There were 708 cases tabulated under this heading—viz., 277 in the province of Leinster ; 148 in Munster ; 192 in Ulster ; and 91 in Connaught.

"189 cases were at their own homes, 235 were in hospital, and 284 were in workhouses.

"*Integumentary System.*—To this order of diseases were attributed 2,405 cases of sickness on last Census night, distributed as follows according to provinces—in Leinster, 657; in Munster, 752; in Ulster, 690; and in Connaught, 306.

"382 cases were at their own homes, 305 were in hospital, and 1,718 were in workhouses.

"DEVELOPMENTAL DISEASES.

"*Debility, Old Age.*—To the effects of old age and debility 6,632 cases were attributed—viz., 2,913 in the province of Leinster; 1,630 in Munster; 1,400 in Ulster; and 689 in Connaught.

"Of the aged and debilitated 1,519 were at their own homes, 59 were in hospital, and 5,054 in workhouses.

"*Other Developmental Diseases.*—Under this heading were tabulated 81 cases—9 in the province of Leinster; 35 in Munster; 22 in Ulster; and 15 in Connaught.

"13 cases were at their own homes, 9 were in hospital, and 59 in workhouses.

"INJURIES.

"In 1851 the number of persons returned on the Census forms as suffering from injuries was 1,033; in 1861 the number was 1,217; in 1871 it was 1,341; and on the present occasion 2,339, of which number 457 were in hospital, 560 in workhouses, and 1,322 were at their own homes."

[*To be continued.*]

Transactions of the American Otological Society. Vol. III. Part 1.
Boston: A. Williams & Co. 1882. Pp. 74.

WE give an analysis of the principal papers contained in this excellent publication.

Dr. O. D. Pomeroy recommends the use of soft India-rubber drainage-tubes in chronic suppurative inflammation of the tympanum, with narrowing or closure of the meatus externus.

Amongst the children admitted to the Foundling Asylum, New York, he has observed a tendency to closure of the meatus externus common in cases of chronic otorrhœa. After trying incision of the meatus, incision posterior to the auricle, and various other methods, all equally unsatisfactory, he adopted the drainage-tube, which he introduces on a stiff wire, and cuts short. By its pressure it helps to open the meatus, and through it the discharge can be removed

by syringing, &c. The size of the tube should be increased as the meatus dilates.

Dr. H. Mathewson, of Brooklyn, records a case of abscess of the cerebellum, following suppurative otitis media three months after apparent cure. The patient was a girl, aged twelve years. She had otitis media suppurativa for eight months, with polypi and mastoid caries. For three months she was apparently perfectly well, when vomiting, headache, &c., commenced, but no symptom of returning ear disease, and in three weeks she died. At the autopsy an abscess containing an ounce of foetid pus was discovered in the cerebellum.

Dr. C. S. Merrill, of Albany, records a case of acute middle ear inflammation, with death on the fourth day from extension of the disease to the brain. As far as he is aware, a case has never been recorded where death followed so soon after the development of inflammatory symptoms in an ear that hitherto had been perfectly healthy.

Dr. Eugene Holt, of Portland, in an interesting paper on "Boiler-makers' Deafness and Hearing in a Noise," gives the results of his experiments and observations upon this class of cases. He concludes from his tests and observations of all who claimed that they could hear better in a noise, that it was evident that conversation as carried on in the shop could be heard better by them than by those who had better or normal ears; but when, in testing these cases, the voice was used in the same tone as in a quiet place, or any of the other tests were employed, they never heard better in the noise. Out of more than 100 examinations he never found a person whose hearing power was really improved in the least degree by a noise.

Boiler-makers' deafness he regards as a variety of chronic otitis media, and therefore that the defect is not in the perceptive power of the auditory nerve, but in the conductive apparatus of the middle ear.

The explanation he gives of the apparent better hearing in a noise is that the conducting media, being muffled by the otitis media and consequent thickening, obstruct altogether the slighter sound-waves, only permitting ones of a certain force to reach the nerve. Thus the noise in the boiler would seem less intense to such, and there would be fewer sound-waves reaching the nerve to cause disturbance than in the case of a normal ear, where all the sound-waves, of whatever intensity, would be perceived, and pro-

duce a distracting effect. The sound of the loud voice would be thus heard better by those whose hearing for slight sounds was less acute. Hence it may follow that persons whose ears are in the pathological condition here assumed to be present, may hear conversation, as carried on in a noise, better than the normal ear, and better than they hear ordinary conversation in a quiet place, but their hearing is not improved by the noise.

Dr. Samuel Theobald, of Baltimore, relates a case of complete osseous closure of both external auditory canals, following chronic otorrhœa.

Dr. H. Knapp, of New York, in a paper on the "Treatment of Aural Polypi," warns against repeated cauterisations—expresses his opinion and experience in favour of the alcohol treatment. He uses for all cases of chronic suppurative otitis, and for small polypi and granulations, an ear-wash consisting of equal parts of pure alcohol and water, with 1 per cent. or 2 per cent. of sulpho-carbolate of zinc, or nitrate of silver, increasing the strength as he goes along. Latterly he has been using impalpable boracic powder dissolved and suspended in alcohol. He recommends letting granulations with a broad basis grow until they have become pedunculated, and vindicates the old method of avulsion as being both expeditious and efficient, and no more dangerous than other methods. He had also used chromic acid with good results.

Dr. R. C. Brandeis, of New York, read a communication on "Exhaustion *versus* Rarification," or rarification of air in the meatus in the treatment of some of the diseases of the middle ear and membrana tympani. He advocated the use of Siegle's pneumatic speculum, not only for diagnostic purposes, but also as a therapeutic agent, and explained how, by means of a syringe attached, he could compress or rarify the air in the meatus, and thus alter the position and tension of the membrane and ossicles. In cases of perforation with otorrhœa, he recommended its use for removing discharge from the Eustachian tube and middle ear.

Dr. C. J. Kipp had, in a number of cases of sparkling synchysis, noticed deafness of one or both ears. Usually the deafness was most marked on the side affected with synchysis. He could not explain the connexion between the affections.

Manual for the Physiological Laboratory. By VINCENT HARRIS, M.D., and D'ARCY POWER, M.A. Second Edition. London: Baillière, Tindall & Co. 1882. Pp. 213.

THIS manual originally consisted of only two parts, and dealt only with the subjects of histology and physiological chemistry. In the present edition a third part has been added, in which a description is given of many pieces of physiological apparatus, and directions are laid down for the performance of some of the more fundamental physiological experiments, as well as for the use of the sphygmograph, ophthalmoscope, and laryngoscope.

This addition, together with several corrections and alterations in the older parts, unquestionably improve the book, whose usefulness is best shown by the speedy call there has been for a second edition.

There is, however, still, as there was in the first edition, too much looseness and want of detail in the directions for the performance of the different operations.

Medical Diagnosis: a Manual of Clinical Methods. By J. GRAHAM BROWN, M.D., F.R.C.S., Ed., &c. Edinburgh: Bell and Bradfute. 1882. Pp. 331.

A SYSTEMATIC plan of examining each case, such as that so well laid down and so lucidly explained in this excellent work, is what we have followed in our clinical instruction for many years. We believe it to be the best and most instructive method to pursue, not alone for the student, but also for the patient. For a practitioner who, as a student, has been trained to examine methodically the condition of each system and organ, is unlikely to neglect points which may have an important bearing on the diagnosis and treatment of a case, but which possibly might escape the attention of a less perfectly instructed observer. In order to become a successful physician it is essential to pay attention to matters of detail, which, although they may appear insignificant, may yet be of the greatest importance when rightly interpreted; and the prominence given to such points in Dr. Brown's book is one of its many useful features. It shows very fully not alone how a case should be taken, but it explains more concisely than in any other work of the kind we know, the significance and causation of the various signs and symptoms to be noted, and gives the best and most recent

methods to be pursued in their investigation. The physical signs met with in disease are naturally grouped together by Dr. Brown in chapters according to the different systems affected. Thus under the "hæmopoietic system," we have, after a consideration of the affections of the lymphatic vessels and glands, a description of the objects and methods of the three main lines of investigation to be followed in the examination of the blood—viz., (1st.) Microscopic Examination. Here the usual pathological changes met with in the blood are classified and described, including the presence in it of such foreign substances as the bacillus anthracis, spirochæte Obermeieri, and the more highly developed filariæ. (2nd.) Enumeration of the Corpuscles of the Blood. Dr. Gowers's hæmacytometer is described and the method of using it explained; and (3rd) Estimation of Hæmoglobin, the same author's instrument for this purpose (which Dr. Brown prefers to all others) being similarly explained. The chapters relating to the circulatory system are very complete. A reference to the cardiac cycle in its bearing on the rhythm of the heart might, however, have been made. The idea that endocardial murmurs are ever caused by rubbing of the blood stream upon roughness or irregularities on the valves or orifices of the heart, is asserted, on the authority of Neumann and Helmholtz, to be a mistaken one. Moreover, "such a state of matters is physically impossible; for, when a fluid streams through a tube, *the walls of which it wets* (as the blood does the endocardium), a thin layer of the fluid becomes attached to the inner wall of the tube by the force of cohesion, and consequently, seeing that the current itself never comes in contact with the tube-wall, no friction between the two is possible."

The various phenomena significant of and accompanying the various forms of murmurs are lucidly explained; and the uses of, and indication furnished by the sphygmograph, cardiograph, and sphygmometer, given at length. In the chapters dealing with the respiratory system, theory, practice, and the results of recent investigation are skilfully associated. The author's views as to the nature of the sound elicited on percussion of the chest deserve attention. They are based on scientific principles and on the laws of acoustics. He holds that in such a sound no definite or well-marked fundamental note can be distinguished, but that it is composed of a large number of tones bearing no definite relation to one another; and that in practice it is impossible to find what is the real pitch of this assumed fundamental or prime tone. The

presence of Charcot's crystals and of the tubercle-bacillus in sputum is referred to, and the means of recognising them expounded. Eichhorst's comparison of the crepitant râle of pneumonia to the sound caused by firmly pressing the moistened thumb against the forefinger, and then suddenly separating the two surfaces close to the ear, furnishes perhaps the best imitation of this particular sound as yet extant. A point in the diagnosis occasionally of paralysis of one vocal chord, by the absence on the paralysed side, on palpation of the normal transmitted vibration, is worthy of note.

Notwithstanding the completeness of the other sections, that on the urinary system is particularly good. It proceeds from an account of the ordinary subjective symptoms connected with this system, to a consideration of the different important points associated with the elimination of the various normal and abnormal constituents of the urine, and the methods to be adopted for their quantitative as well as qualitative estimation. The urinary sediments are equally well treated of.

The work is well indexed, and is illustrated by a dozen woodcuts, which might be advantageously increased in number in a second edition.

History of Medicine in Massachusetts. By SAMUEL ABBOTT GREEN, M.D. Boston: Williams & Co. London: Trübner & Co. 1881. Pp. 131.

DR. GREEN'S little book is a Centennial Address, delivered before the Massachusetts Medical Society in the year 1881. Though it was during the War of Independence that the physicians and surgeons of this, the most cultured State of the Union, were led to feel the need of some Association to encourage their professional studies, a sketch is given of medical practice in the early days of the settlement. Bleeding was freely practised by ministers, dentists, and barbers. By the way, the origin of the barbers' trade sign, which may be new to many, is mentioned as follows:—Formerly, while undergoing venesection, the patient was wont to grasp a pole in order to make the blood flow more freely, and as the pole was liable to be stained, it was painted red. When it was not in use the barber would hang it up on the outside of his door, with white linen swathing bands twisted round it. The red and white pole of the present day has resulted by evolution from this custom.

Many interesting facts are related of the early founders of medicine and its sister art, dentistry; and, indeed, the address is readable by many outside the State for whose benefit it was compiled.

A Visit to Madeira in the Winter of 1880-81. Two Lectures. By DENNIS EMBLETON, M.D., F.R.C.P., Consulting Physician to the Newcastle-upon-Tyne Infirmary. London: Messrs. Churchill. 1882. Pp. 90.

DR. EMBLETON'S record of his visit to Madeira is contained in these two lectures, delivered to the Literary Society of Newcastle-upon-Tyne; they therefore enter but little into the merits of the climate as a remedial agent in affections of the chest. There are tables of comparative temperatures, chiefly from the English resident physicians' work, showing both that the mean temperature is about 20° Fahrenheit higher than in London, 10° higher than Mentone, and also that the mean diurnal variation is not greater than at Torquay; but in the selection of a climate there are other considerations besides warmth to be taken into account. Dr. Embleton's own observations, being intended chiefly for non-medical readers, are too limited in their scope to be of much use for physicians' purposes. It may be some comfort for us, however, to know that a winter at Madeira is not all sunshine. A December of most delightful weather was followed by "rains which lasted, with an occasional fine day, for about a month. During this time torrents of rain fell as they do in thunder-storms in England. The air became saturated with moisture, everything outside was thoroughly soaked, and every article in the house became damp; the bed and bed-clothes had to be re-dried before our invalid and his wife could retire for the night." Again—"Fine weather returned at the end of January, and continued till the 17th February, when the tops of the mountains became covered with snow, and the temperature fell to 46°. In March we had again cold weather, with strong gales from the west, lightning, thunder, and rain, the winds lasting daily for a fortnight," &c.

Concerning the history of the island, its natural productions, &c., the author writes in a concise and interesting way; and no one who has any idea of taking a voyage there should omit a perusal of the work, as he will find in it many valuable hints.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.^a

By RINGROSE ATKINS, M.A., M.D.; Medical Superintendent,
District Lunatic Asylum, Waterford.

I. INSANITY IN GENERAL.

The Nature and Definition of Insanity.—It is, and has always been, universally acknowledged to be easier to recognise the nature of insanity than to so comprehensively define it as to leave no room for exceptions. In reference to the definitions and opinions of Drs. Mercier, Kiernan, and Hughlings Jackson, recorded in my last Report (May, 1882), I would now quote the views of Dr. Hughes, published in the *Alienist and Neurologist*, July, 1882, taken from an address delivered by him some time previously. He regards insanity, “whether acute or chronic, and howsoever acute or however chronic, as a mental change in the individual, resulting from cerebral disease, causing him to act not in harmony with his natural self and surroundings,” In a state of mental health the mental faculties appear to act as a whole. There is a peculiar harmony in their action, and in their relation to each other in action, giving to each person a distinct mentality, and constituting the person's natural character. In insanity this natural harmonious action is disturbed, and the lunatic is neither in harmony with himself, as he has appeared naturally, or with his surroundings. He is deranged in regard to both. If no change in the habits of thought, feeling, or action of the individual takes place, then it is not insanity. *The true test of insanity, therefore, is the comparison of the individual with his former self,* taken in connexion with disease of the brain. There are but few objections to this definition, the principal one being aphasia, where no mental aberration of necessity really co-exists, for a man

^a The author of this Report, desirous that no contribution to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal, they will be forwarded.

may be both aphasic and insane. Here, then, is a disease of the brain which always produces to some extent a change in the manner, if not in the habit of thought, of the afflicted individual, and in some of his feelings and modes of action, and yet there need be no insanity in consequence of it. But if the aphasic person or the individual suffering from cerebral traumatism, especially of the anterior lobes of one hemisphere (as sometimes happens without delirium or other mental disturbance) recognises in a rational manner that his brain is injured, and appreciates the extent of his disability, and the necessity for modified mental and physical activity, and comports himself mentally in accordance with the facts; he is not insane, and it is here that the qualifying clause, *in harmony with one's natural self and surroundings, becomes the saving clause that establishes one's sanity even though he have disease of the brain, while our inability to truthfully affirm the existence of this harmony establishes the presence of mental disease.*

It must be borne in mind that every definition of insanity is an attempt to aggregate many morbid conditions into one comprehensive and brief description—to unify all the neuro-psychic disorders beginning or ending in the brain and disordering the mind, as to make any and every form of insanity readily recognisable by applying to it the test of a single comprehensive definition, yet we succeed better in grouping together all the diseases of the brain affecting the mind than if we were to attempt to comprehensively define all the diseases of the spinal cord or nervous system elsewhere affecting sensation and motion. The beginning of all diseases is altered molecular action either in the blood, which nourishes a part or organ and which is its life, or in the nerves which constitute the soul, so to speak, of organic function. Next follows more profound change, which we recognise as structural and marked derangement of organic functions—we then have recognisable and appreciable disease; when there is either a functional or structural disease of a whole organ we have change in its natural manner of acting, whether it be in the heart, the lungs, the liver, the abdominal or thoracic viscera, or in the cerebro-spinal axis. Wherever it may be, the natural manner of action is changed, and the organ or part involved is neither in harmony with itself naturally, nor with its surroundings in the organism. So it is with the lower and higher centres in the brain; if the former are affected paralysis results; if the latter, psychical disturbance. So that insanity conforms to the law of all other diseases in being

a departure from natural function due to morbid invasion and differs from them only in the fact that the invaded territory is that which is occupied especially by the mind.

The Alleged Increase of Insanity.—It appears from the Thirty-fifth Report of the English Commissioners in Lunacy, that whereas on January 1, 1880, there were in all 71,191 individuals known to the Commissioners as lunatics, idiots, or persons of unsound mind, the return for January 1, 1881, gives the number as 73,113, being an increase of 1,922. The Commissioners say—"We may here at once state that the excess in the average annual increase of numbers shown by the figures of the 1st of January last as compared with those of the 1st of January, 1880, is fully accounted for by the diminished death-rate in asylums, hospitals, and licensed houses, of the year 1880, as compared with 1879." The increase is in the pauper not in the private class. It is significant and interesting as bearing upon the question, "Is insanity increasing?" which has been so frequently discussed in our columns and elsewhere—notably by Dr. Mortimer Granville in the *Nineteenth Century*, March, 1879—that the Commissioners have introduced a new tabular statement showing the yearly ratio of fresh admissions to population. From this it appears that the ratio per 10,000 of admissions to population in the years 1869–80 were as follows: totals—1869, 4·71; 1870, 4·54; 1871, 4·62; 1872, 4·59; 1873, 4·80; 1874, 5·03; 1875, 5·19; 1876, 5·30; 1877, 5·28; 1878, 5·36; 1879, 5·20; 1880, 5·19. For the purposes of this table the transfers and admissions to idiot asylums have been excluded. The Commissioners observe:—"It is, we think, an established fact that the legislature of 1874 has tended to encourage the removal of pauper lunatics from workhouses into asylums, and has thus helped annually to swell the *total* admissions. It will, however, be observed, that notwithstanding this fact above stated, the ratio of the yearly increase of admissions to population has been but slight and not constant, showing that the large increase of the number of the insane under care in asylums, hospitals, and licensed houses during the twelve years to which the table quoted refers, is mainly due to *accumulation* and *not to a greater annual product of insanity.*"—*The Lancet*.

The Pathogeny of Hallucinations.—Dr. V. Parant contributes to the May (1882) number of the *Annales Méd. Psychol.* a note on the pathogeny of hallucinations, in relation to a case of voluntary psycho-sensorial hallucinations occurring in an insane person. Briefly his conclusions are—1. The senses, be they morbid or healthy, as

well as the intelligence, play each a part in the production of hallucinations. 2. There are cases of voluntary psycho-sensorial hallucinations amongst the insane, which conclusively show the primal original influence of the intelligence in their production.

The Epileptic Change and its Appearance among Feeble-minded Children.—Dr. I. N. Kerlin, of the Pennsylvania Institution for feeble-minded children, has, in the *Alienist and Neurologist*, July, 1882, a paper on the subject, in which he says:—"From an examination of the history of three hundred imbecile children between the ages of five and sixteen, I find that sixty-two, or twenty-two per cent., are now epileptics, that one hundred and fifty-six, or fifty-two per cent., have in their antecedents the history of epileptoid diseases, but are not epileptics at the time of writing—that is, one hundred and fifty-six of three hundred feeble-minded children either have been epileptic or present some one or more of the neurotic conditions which frequently follow or are introductory to the epileptic state. Finally, of the whole three hundred cases there were seventy-eight in whom there was neither epilepsy, paralysis, nor chorea; or in this examination there is twenty-six per cent. of idiocy, uncomplicated with the cited disabilities. But as I have included in the latter number children in whom there are infirmities of speech, irregularities of gait, &c., it will be interesting to examine these seventy-eight epileptic examples. Six are mutes; nine are semi-mutes; fifteen have imperfect speech; eighteen are uncertain in their gait; nine are deaf; six have imperfect vision; three are marked hydrocephals; six are semi-microcephals; three have muscular tremors."

Thus, in fact, this analysis leaves only *fifteen* of the whole three hundred who are of sound physical health, and unimpaired organism; or, strictly speaking, fifteen weak-minded children, in whom there are neither obvious nor pre-existing complications, excepting such as spring from their own inherent stupidity.

Cases are given illustrating the slight causes which are sometimes sufficient to excite an epileptic fit in children, and also the power of controlling the attacks under the influence of a desire to attend some place of amusement, &c. The paper sums up by emphasising the fact that a large proportion of feeble-minded children present a history of either epilepsy or allied neurosis, and that the epileptic change is not necessarily accompanied with convulsions and insensibility, for these may be transformed into emotional automatism, or eccentricity of behaviour or morals.

Simulation of Insanity by the Insane.—At a meeting of the Chicago Medical Society, March 20th, 1882, Dr. J. G. Kiernan read a paper on this subject. The Section of Mental Diseases of the International Medical Congress, 1876, had unanimously adopted the following conclusion:—"It is not only not impossible for the insane to simulate insanity for any purpose, in any but its gravest forms of profound mental involvement, but they do actually simulate acts and forms of insanity for which there exists no pathological warrant that we can discover in the real disease affecting them." Dr. Kiernan, agreeing with this conclusion, says that he is of opinion that the insane can and do feign insanity; that in most of those so doing there is a strong hereditary taint; that their insanity belongs to the grade known as the "primäre Verrücktheit" of the Germans, the "manie raisonnée" of the French, the "imbecility of the first grade" of Ray and Nicols, the "monomania" of Spitzka, and the "chronic intellectual mania" or "chronic mania without incoherence" of asylum reports; that the insane may feign insanity when accused of crime, and a new complication thereby enters into the diagnosis; and he calls attention to the fact that it might be of interest to note that the theory suggested by Dr. Ray, that Hamlet was an insane man feigning insanity, would better explain the psychological problem presented in the tragedy bearing that name than any other theory yet suggested.—*American Journal of Neurology and Psychiatry*, May, 1882. Reprint.

Insanity from Traumatism.—Dr. W. P. Verity, of Chicago, in a paper on this question, gives the following quotations from well-known authors in reference to the mental disorders which follow injuries to the head. Marcè considers that in the majority of cases of insanity produced by injuries to the skull the disease assumes an ill-defined form, offering irregular alternations of stupor, agitation, and imperfect lucidity, without systematised delirious ideas. Krafft-Ebing classifies insanity from traumatism according as it is due (1) to the accident directly, or (2) is manifested later. The prodromata are disordered motor or sensory phenomena and change of character; in a third group the insane outbreak is preceded by a latent susceptibility determined by the injury, which may be considered as an acquired predisposition as it were, and which only requires an exciting cause to develop into actual insanity. Skae, the originator of the term "Traumatic Insanity," after an analysis of numerous cases, arrived at the following conclusions:—(1) Traumatic insanity is generally characterised at the commencement

by maniacal excitement varying in intensity and character. (2) The excitement is succeeded by a chronic condition often lasting many years, when the patient is irritable, suspicious, and dangerous to others. (3) In many cases distinct homicidal impulses exist. (4) The characteristic delusions in this form of insanity are those of pride, self-esteem, and suspicion, melancholia being but rarely present. (5) This form is but rarely recovered from, and has a tendency to pass into dementia, and terminate fatally by brain disease. Kiernan summarises the results of an observation of forty-five cases thus:—(1) Traumatism produces certain psychoses. (2) The majority of these are unaccompanied by epilepsy. (3) The majority have a tendency to end in progressive paresis. (4) A large proportion are accompanied by depressing delusions. (5) The majority of these latter do not exhibit any hereditary taint. (6) With certain modifications Krafft-Ebing's conclusions respecting the traumatic psychoses are correct. (7) Injuries received before the age of forty are probably of more effect in producing insanity than those received subsequently. (8) Slight injuries, from the insidious nature of the changes they set up, are as much to be dreaded, if not more so, than the grave injuries. (9) Traumatic causes have not as much influence in the production of insanity as is intimated by Schläger, he finding that over eight per cent. of the cases examined were caused by traumatism, while in his cases (Dr. Kiernan's) but two per cent. were so caused. (10) That certain cases of insanity, caused by traumatism, have well-marked systematised delusions. (11) That in all cases of insanity caused by traumatism a guarded prognosis should be given.—*Am. Journ., Neurol. and Psych.*

Relation of Accession of Acute Disease to the Recoveries from Insanity.—Acute diseases have long been regarded by Alienists as exerting at times a beneficial effect sometimes temporary, sometimes permanent, on the psychoses. The cases reported by Fritsch (*Jahrbuch für Psych.*, Band. III., Heft 3) are in full accord with previous observations. Two cases of melancholia were attacked by erysipelas; they became delirious. On recovery from the delirium they were found to be, and remained, mentally sound. A case of progressive paresis was temporarily improved. Similar cases have been reported by Esquirol (*Maladies Mentales*), Sponholz (*Allgemeine Zeitschrift f. Psych.*), Nasse, and Macleod (*Journal of Ment. Science*, 1879). [I have seen a case where convalescence from typhoid fever was accompanied by complete recovery from severe and long-

continued mental disease with great excitement and incoherence.—Rep.].—*Alienist and Neurologist*.

II. ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

The Blood-Vessels of the Spinal Cord.—With the view of sustaining a theory recently advanced by him in the *Archiv. für. Psych. und Nervenkrankheiten*—namely, that tabes is not a systemic disease, but is caused by an interstitial connective-tissue degeneration, originating in the blood-vessels of the posterior columns. Adam-Kiewicz has made an extended examination of the distribution of the minute blood-vessels of the human spinal cord. Most of the blood which enters the cord goes to the grey matter. All the blood-vessels in the cord originate in two arterial systems:—1. A centrifugal system; 2. A centripetal system. 1. The centrifugal system commences in a row of small arterial trunks, 250 to 300 in number, which, springing nearly at right angles from the arteria-spinalis anterior, pass to the bottom of the anterior longitudinal fissure, and enter the anterior commissure. Here each one divides into two branches, which pass out horizontally into the grey matter, where they divide into tertiary branches, some of which run longitudinally and form anastomoses with branches from corresponding neighbouring systems. Other tertiary branches spread out horizontally and form a capillary network in the central portion of the grey matter. 2. The centripetal system consists of vessels which come in on all sides from the pia mater, and pass in converging lines into or through the white matter. One set of these vessels consists of small trunks which supply the peripheral zone of white matter. Another set consists of larger vessels which are distributed to the deeper portions of the white matter; while a third set of still larger trunks pass with little branching directly into the grey matter, where they break up into a rich capillary network, which supplies those parts not provided for by the above-described centrifugal system. Special systems are described in the posterior columns and anterior cornua. There is a general correspondence between the distribution of arteries and veins. He considers, finally, that this arrangement of blood-vessels is confirmatory of his theory.

Minute Structure of the Cortex of the Cerebrum.—The difficulties in the modes of investigation which are encountered in histological studies of the central nervous system, readily account for the difference of opinion still existing in regard to the minute structure of even the most important parts of the brain and cord, and the

danger of relying upon any one mode of preparation is emphasised by Exner, in his recent investigations on the cortex of the human brain. His attention was chiefly directed to the upper end of both central convolutions. He soaks small pieces from the cortex of these regions in a one per cent. solution of osmic acid for five to ten days, and treats very thin sections from these with a mixture of glycerine and aqua ammoniæ. The ammonia causes a swelling of the sustentacular tissue, and almost complete disappearance of the nerve-cells and non-medullated nerve-fibres; while the medullated fibres, blackened by the osmic acid, become extraordinarily distinct, especially while the preparations are fresh. Adopting Meynert's division of the cortex into five layers, he finds that the external layer, usually described as consisting chiefly of neuroglia elements, is really largely composed of medullated nerve-fibres, of varying diameter, running in all directions. Those in the outermost stratum, intermingled with connective tissue-fibres, run nearly parallel with the surface, while in the inner portions medullated nerve-fibres rise from the second layer, and, bending over, become nearly parallel with the surface. The very abundant medullated nerve-fibres of the second layer have, in general, a smaller diameter than those in the other layers. He cannot convince himself of the division of medullated nerve-fibres in the cortex, as described by Gerlach. The large spheroidal spaces which are frequently seen in the central layers of the cortex, especially in chromic acid preparations, are really only gigantic varicosities in medullated nerve-fibres. It would appear from his description and figures that a large part of the cortex, which has usually been regarded as "basement substance," is really composed of medullated nerve-fibres, and hence is of much greater physiological importance than is commonly believed. He describes large ganglion cells, resembling Purkinje's cells, which are found in the outer layer of the cortex of new-born children, and which disappear as the individual matures, whether by absorption or by transformation into cells of the adult form he is unable to decide. In the nuclear layer of the cerebellum, as well as in the grey matter of the cord, his method reveals unexpectedly large numbers of medullated nerve-fibres.—*Amer. Jour. of Nerv. and Ment. Dis.*

Researches on Aggregations of Leucocytes in the Cortical Substance of the Brain.—Prince Charles, of Bavaria, who has adopted the profession of a physician, has recently written a work on this subject, of which the following are the conclusions:—

1st. Throughout the entire cortex of the brain, even in its most healthy condition, there is a considerable number of leucocytes.

2nd. A lowered circulation, with a considerable quantity of serous fluid in the brain, tends to produce an aggregation of leucocytes.

3rd. These corpuscles are found in the perivascular spaces of His, and in the adventitious canals of Robin, but by preference they lie in the peri-ganglionic spaces.

4th. They never penetrate into the ganglion cells, nor cause a reduplication of the nuclei of the latter.

5th. The cerebral symptoms are not in accord with the multiplication of the leucocytes, nor with the lowering of the circulation and accumulation of fluid, provided the latter collect slowly, but must be considered as the expression or outcome of the three phenomena combined; and it is necessary also to take into account fevers and the causes which produce them.—*Annales Méd. Psychol.*, July, 1882.

Researches on a New Function of the Nervous System.—M. Brown-Séquard has contributed to *La France Médicale* a note on what he considers to be a hitherto unrecognised function of the nervous system. He desires to point out that many parts of the nervous system can act suddenly or very rapidly, and in a purely dynamic manner, without any nutritive influence, on other parts of the same system, with the effect of increasing the power of these latter parts.

The Position of the Motor Centres in the Brain in regard to the Nutritive and Social Functions.—Dr. Lauder Brunton in his paper on this subject in *Brain*, Jan., 1882, writes, that since the respiration of air and the acquisition of food are the fundamental acts of self-preservation, the motor centres must be arranged according to these requirements. He believes that since the act of respiration is a very simple one, its centre is therefore to be found in the medulla oblongata and the upper part of the spinal cord, but that where an adult has learned to modify respiration by careful study, as in singing, the centre will be in the cerebrum. The centres by which the primary acts of nutrition, deglutition, digestion, &c., are affected, are also in the spinal cord; and sympathetic ganglia for anencephalous infants will suck, and a pigeon deprived of its brain will swallow the grains of corn placed in its beak, but they are unable to seek their food. The centres by which the more complicated acts required to seek food are, no doubt, situated in the brain, and as the

movements for seeking and obtaining food are essential to the animal's existence, we should expect that the motor centres in the brain would be arranged chiefly with reference to the acquisition of food, and that the centres would be modified in different animals according to the manner in which they obtained their food. He considers, from an examination of the functions of the motor centres in the brain, as ascertained by Ferrier, that the latter are arranged round the crucial sulcus or fissure of Rolando in such an order as first of all to subserve the wants of the animal in obtaining food, the motor centres which are first called into requisition in going after food being nearest to the fissure, and those which are only required after the first centres have been in action for some time being arranged in an adjoining convolution. The centres for the exercise of the voice and for the sexual instinct which comes only after the wants of the individual have been satisfied by food, are further removed from the fissure of Rolando than those concerned in the obtaining of food, but the data on this point are not yet sufficient to arrive at any definite conclusion.

The Localisation of the Respiratory Centre.—Langendorff, in *Du Bois Raymond's Archives*, recounts the results of a series of experiments made by irritating the medulla oblongata. He holds that the respiratory centres are seated in the spinal cord; he tries to explain Flouren's experiment why, after injury to the medulla oblongata, or after cutting away this part of the cerebro-spinal axis, the breathing is usually arrested. First he takes the position that the mechanical injury to the medulla is a shock to the spinal centres lying in the neighbourhood. He believes the medulla oblongata is the seat of a regulatory or inhibitory centre whose impulses go to the spinal centres of the respiratory nerves. The mechanical irritation of this apparatus or its paths, by a section or puncture, produces a lasting inhibitory effect upon the activity of the spinal centres. The existence of an inhibitory apparatus in the medulla oblongata is a necessary conclusion, for in the central trunk of the vagus, inhibitory fibres run partly from the two laryngeal nerves and partly from the lungs, and find their next station in the medulla. The question then arises—Is one in a position through irritation of the medulla oblongata to inhibit the respiration of an animal? Langendorff tried electrical, mechanical, and chemical irritation. The experiments were mainly made on rabbits. He thinks that his results may be explained by the view that in the medulla oblongata are centres whose irritation inhibit the respira-

tion, and that it can be held that the section into the medulla not only irritates this apparatus, but also exerts a shock upon the spinal respiratory centres lying in the neighbourhood.—*Am. Jour. of Nerv. and Ment. Dis.*

Goltz on the Functions of the Brain.—Goltz publishes a further series of experiments on the cerebral hemispheres of the dog, in which, instead of following his old method of destroying the cortex with a stream of water, he established the lesions by means of a White's boring machine, the construction of which is described. The general conclusions he arrives at are:—

1. The hypothesis of circumscribed centres for special functions in the cerebral cortex is untenable.

2. There is no area of the cortex exclusively concerned with sight, hearing, smell, taste, or touch.

3. It is impossible by any circumscribed lesion of the cortex to produce permanent paralysis of any muscle, or remove it from the influence of the will.

4. The vital manifestations which we regard as indicative of intelligence, feeling, emotion, instinct, are not dependent on functionally differentiated cortical regions.

5. Destructive lesions of the frontal regions of the hemispheres cause defects which differ in certain respects from those caused by lesions of the occipital regions. These differences depend probably on simultaneous lesion of the conducting tracts which lead to the crura. So far as yet made out the difference amounts only to this—that while removal of the anterior regions shows itself in clumsier movements and reduced tactile sensibility, removal of the hinder lobes more distinctly affects sight and other specialised senses; and this concession (if it may be regarded as a concession) to the localisation hypothesis is guarded by a suggestion that the ground of the difference is to be sought for, not in the cortex itself, but in the underlying white tracts. The general intelligence is also somewhat more affected in destruction of the hinder lobes; but this result, in Goltz's view, must be ascribed to their larger extent, since it is always upon the *amount* of lesion (both hemispheres being involved) that he has found permanent deficiency of function mainly to depend. The deficiency is manifested in generally lowered intelligence with blunted sensibility; but, even when the destruction is carried so far as to reduce the animal to perfect imbecility, there is not one of its senses through which it may not be still stimulated, nor one of its muscles over which it has lost

control. So far, indeed, may the destruction be carried by Goltz's newer method, that in one case he declares he found the powers of movement with some form of every one of the modes of sensation remaining, though the brain, as preserved after death, weighed only 13 grammes against 90 grammes as the normal weight of the brain similarly treated in a similar subject. Ferrier, on the other hand, found that his own earlier assertions of loss of particular functions in monkeys newly operated on apply equally to subjects that have long recovered from the disturbing effects of operation. The monkey exhibited before the International Medical Congress, proved by autopsy to have lost nearly the whole of the motor area in the left hemisphere, and no other part of the cortex, remained affected with motor hemiplegia of the right side seven months after the operation, while otherwise appearing in full possession of its normal powers. The other monkey, deprived of the strictly limited portion of one particular convolution (superior temporo-sphenoidal) in each hemisphere, which Ferrier from the first had fixed on as the "auditory centre," appeared to have lost all power of hearing, and to have lost nothing whatever besides.

What is to be made of evidence that seems as if it could hardly be more pronounced? Ferrier can only suggest that the discrepant results of Goltz are explicable from the lower organisation of dogs. Just as frogs can perform many complex and apparently purposive acts after the removal of the hemispheres altogether, so he thinks that with greatly mutilated hemispheres dogs may still, through lower centres, remain liable to be affected, and able to act in ways not possible for monkeys, much less for human beings. Nor is the suggestion without point against Goltz, who is ready to talk of his mutilated dogs as mere "reflex eating machines," and is not disposed to dogmatise as to the subjective character of the varied sensibility, which, he maintains, is left after destruction of the cortical substance has been carried to the utmost accessible limit. The suggestion, however, by no means suffices to remove the difficulty. A dog is not so different in the conditions of its intelligence from a monkey that a wholly different relation may be supposed to obtain between the lower and higher brain centres in the one and in the other. The cortical substance can hardly be indispensably necessary for the simplest reaction upon an optical and auditory impression in a monkey and wholly superfluous in a dog; and the case is even harder to conceive, for, in Ferrier's view, it is one small fractional area of the cortex that is thus indispensable in monkeys for sight

and for hearing. The newer facts adduced by Ferrier do nothing to obviate the objection that has been before urged against him—that he takes the brain for much too loose an aggregation of parts, much too simple and distinct; that at any of the circumscribed spots denominated by him “motor or sensory” centres, through all the thickness of the cortical substance, just one particular class of motor impulses or of sense impressions is to be understood as organically provided for, is an assertion that would take one knows not what amount of experiment and clinical observation to prove. Goltz’s conception of the intricate constitution and working of the brain, so far as he has yet shadowed it forth, must be said to come much nearer to meeting the requirements which psychology would make of physiology; and so long as such facts can be produced as Goltz has recorded in his memoirs, it is hard to believe that Ferrier rightly interprets the different facts which he on his side may now be allowed to have established. It clearly, however, becomes the duty of Goltz in carrying forward (as he promises in his last memoir) the inquiry into localisation, from his own point of view, to meet his opponent on common ground, and show, if he can, that the more developed brain of the monkey is also not the simple congeries of distinctly circumscribed centres, which evidently the dog’s is. Meanwhile it is needless to dwell upon the circumstance noted by the committee of experts in the two brains (presented to the Internat. Med. Congress) submitted to closer examination—that the lesions in neither case have been confined to the cortex. Too little is known of the relation in which the white tracts in the hemispheres stand to the cortex to give ground for suggestions that can yet help to reconcile the discrepant results. It should only be mentioned that in both cases the basal ganglia appeared to be unaffected by the lesions from above. The discrepancy, therefore (to call it by the mildest name) may be held as affecting the brain proper, and in the brain pre-eminently the grey cortical matter which all are agreed in regarding as that organic structure whose functions are most immediately related to the processes of subjective mental life.—*Am. Journal of Insanity, from Editorial in “Mind.”*

Couty on Cerebral Localisation.—Dr. Couty has recently made investigations on a large scale on dogs and several varieties of monkeys, in reference to the effects of localised excitation and localised destruction of the cerebral cortex. He shows himself a disciple of Brown-Séquard, and denies, in the full extension of the term, the existence of any cortical localisation whatever. The con-

clusions arrived at in his communications presented to the Société de Biologie are as follows :—

1st. The extent of the cortical motor zone, determined by the excitement of the induced current, he found to be very variable in the dog and in the monkey. In some cases, for example, all the convolutions of the sigmoid gyrus were excitable; in others, on the contrary, only a single convolution was so. Thus, in the monkeys the convolutions of the whole region between the curved fold and the anterior third of the parallel convolutions, or the ascending frontal, were found excitable; in many the excitable zone was even limited to the Rolandic sulcus. Further, the disposition of the motor zone varies in the same animal in different moments of the same experiment. Indeed, in comparing the effects of successive electrifications on the same brain, the motor zone is seen to contract by little and little, and to disappear before or soon after death. In certain cases (more rarely) he observed the multiplication and extension of the pretended motor centres. The number of the excitable points is extremely variable in the dog and monkey. The author never observed in the animal all the centres of movements described, and frequently one, two, or even more were wanting (of the eyelids, lips, tail, and the hind legs). The disposition of the motor points varies in different animals, nor is there in different brains any relation in the situation of a given centre. The situation of every motor point varies in the same animal in such a way that the frontal convolutions, for example, will be successively the centre for the fore leg, the tail, the lips, or both limbs during the same experiment. No relations can, therefore, be established between a movement and a given point of the cerebral cortex. It should here be observed that Dr. Couty employed currents weaker than those used by Ferrier on animals slightly anæsthetic or in a perfectly normal condition.

2nd. In sequence to lesions of the brain of a different nature (abrasions and cauterisations, superficial and deep) he found that in the same animal there might follow, at periods very different on the same, or on different muscular groups, two sorts of motor disorders—paralysis and contractures. On testing the cortical excitability in monkeys and dogs obviously paralysed he found it almost always abolished. In two dogs completely recovered from intense and prolonged paralytic symptoms the cortical excitability of the injured hemispheres did not reappear; the other hemisphere alone was excitable to electricity. Couty states that from his first experiments

he had observed that *all cortical lesions, whether anterior, posterior, or median, could determine opposite paralytic disorders*, which were, however, *more marked and durable, following medio-anterior lesions*. Having limited in a monkey a zone which acted on the face, he destroyed it and found symptoms of general paralysis. Again, in dogs on which excitation of a cortical point caused movement of a hind leg, the destruction of this cerebral part produced paralysis of both legs—whether both hind, or a hind and fore, is not stated. Inversely on the dog and monkey limited lesions, for example, on the half of the ascending frontal which had rendered it inexcitable produced no appreciable symptom. From these facts Couty denies any relation whatever between the nature and seat of the lesion and the nature and seat of the motor disorders following.

3rd. Diminution of cutaneous sensibility is frequently produced after cerebral lesions; disorders of motion are, however, more rare. The seat of these is always on the side opposite to the lesion. No relation exists between the seat of a cerebral lesion and cutaneous insensibility, the author having realised this fact on dogs and monkeys after both anterior and posterior lesions. He observed the diminution of sensibility never occurred alone, but was always associated with motor disorders. He very frequently observed a diminution or a loss of the palpebral reflex of the eye opposite to the lesion. In sixty animals he met only seven times (in four monkeys and three dogs) with a diminution of sight in the opposite eye; complete blindness was never produced. The visual disturbances always coincided with other disorders of motion, and sometimes of sensibility. He denies any relation between disturbances of sense and the nature and seat of the lesion. No disorder of intelligence followed destruction of the most anterior zone in three monkeys and several dogs. In other cases also of cerebral lesions he observed no distinct disturbances of intelligence.

4th. What is the intimate mechanism of these diverse disorders which follow alike a cortical lesion, whether anterior, posterior, or median? In order to discover this, Couty, in place of studying the state of the brain and of the peripheral organs, directs his attention to the examination of the functions of the bulb and the medulla, and he found them always much modified. The disorder most constantly produced by a cortical lesion is the diminution or loss of the reflex motions, and most frequently on the side opposite to the lesion; the animal, for example, does not withdraw the limb on this side on being pinched or pricked, and does not move the eye on

being stimulated by light. This diminution or loss of reflex motion is not to be confounded with sensitive disorders, which are much more rare, nor with motor disorders. He frequently observed, in one half the cases, disorders of co-ordination of various forms—as shakings, tremors, ataxy, rotary movements, generally limited to the side opposite to the cortical lesion. Now, all these disorders could be explained only by a *pathological modification of the apparatus of the medulla* to which they correspond. So, therefore, the author always found modified the different functions of the medulla and bulb in animals that presented disorders apparently cortical; and he was induced to seek in these intermediate modifications the unique cause of all the phenomena observed. In support of this opinion he addresses the following arguments :—1st. If the white fibres go directly from the brain to the muscles they ought to comport themselves alike in the brain and the medulla. Instead of this it is observed that whatever may be the mode of cortical paralysis at the moment in which the cortical white fibres become inexcitable, those of the medulla spinalis are very sensible to electricity. The bulb also behaves in the same way as the lumbar cord. 2nd. The excitability of the brain is lost at the same time as, or a little before, that of the sensitive nerves—for example, the sciatic nerves; but the animal that has lost its reflex cortical movements and its reflex peripheral movements still preserves the medulla very excitable. This shows that the white cortical fibres are analagous to the centripetal peripheral, and distinct from the conductors. 3rd. By using curare, which is a peripheral paralysing agent, and has the property of arresting successively the transmission of voluntary excitations and excitations of the bulb, and ultimately the medullary or asphyxia movements, it is seen that in animals curarised and completely paralysed in every voluntary movement, and finally in that of respiration, the effects of cortical electrification still persist. The electrification acts, not on the cerebral cortex, but on the bulbo-medullary grey substance, since its effects augment, diminish, and are suppressed with the doses of curare which causes the variations of the reflex or asphyxic movements.

5th. In conclusion, Dr. Couty holds that the effect of cortical irritation or lesions is always indirect, and due to intermediary disorders of the apparatus comprised between the brain and the peripheral organs—namely, the bulb and the spinal cord.—Abstracted from *Revista Sperm. di Freniatria* Fascic. III., in *Am. Journal of Insanity*.

*Brown-Séguar*d on Cerebral Localisation.—Brown-Séguar exhibited to the Société Biologique a monkey in whom, four months previously, he had extirpated the motor centre of the *left* posterior extremity. There ensued a paralysis of the *left* posterior member, then atrophy and contracture in a state of flexion. The limb had diminished in length three centimetres. He then stretched the left sciatic nerve by means of a kilogramme weight for five minutes. The paralysis increased immediately afterwards, but the contracture diminished, and in an hour afterwards the member increased in length a centimetre, and in five days the two limbs were equal in length, the contracture had totally disappeared, and the paralysis was very much improved. At the time of exhibition the left limb was not over a centimetre shorter. Brown-Séguar stated that the contracture was due to a particular state of the motor nerve-endings in the muscle; that the cause of the contracture resided neither in the brain nor in the spinal cord, for the cerebral changes persist, but it is possible for the contracture to disappear.—(*Progrès Médical*.)

III. NEURO-MENTAL PATHOLOGY AND PATHOLOGICAL ANATOMY.

Psychoses after Cerebral Hæmorrhage.—Mendel (*Deutsche med. Wochens.*, No. 3, 1882) claims that the most frequent form of mental disturbance after cerebral hæmorrhage is a mental debility in all degrees, from slowly acquired haziness of intellect to the most profound dementia. In another class of cases intelligence seems but slightly impaired, and frequently indeed exhibits no defects, but the patient becomes irritable, easily moved to tears, or at times remaining unaffected under the most trying circumstances. There is a third form of psychical disturbance. Dr. Mendel has seen it but five times in patients suffering with right hemiplegia. In these cases, besides the psychical disturbances described above, there were developed hallucinations. The three cases contributed by Mendel recovered, but a slightly defective memory was left. That progressive paresis may develop as the result of cerebral hæmorrhage has been often affirmed, but Dr Mendel is of opinion that no positive conclusion can be drawn with regard to the relation between these two conditions. Mendel's cases do not, however, seem to have been sufficiently long observed to enable him to pronounce so positively that progressive paresis does result; there can be no doubt but that it is certainly less frequent than has generally been claimed, as in many instances the cerebral hæmorrhage is

either a complication or the result of pre-existent progressive paresis.—*Am. Journal of Nerv. and Ment. Dis.*

On Hebephrenia—Dr. Fric, of Wurzburg, contributes to the *Allgemeine Zeitschrift für Psychiatrie* an article on this form of mental disorder. He considers that hebephrenia occupies in cerebro-mental pathology as legitimate a place as general paralysis. Its symptomatology is clear and well defined, and the prognosis—so grave—can be established with certainty from the outset. This affection is tributary to psychic degeneration, by which is understood an early arrest of development of the brain, in virtue of which the intelligence does not attain its proper development, and at the period of puberty undergoes a regressive evolution. The truth of this statement can be deduced from the proteiform character of the delusions which occur, and from the incoherence of the ideas and acts, which are impulsive and instinctive—depression alternating with exaltation, and complete remissions unexpectedly supervening, followed by rapid relapses. Hebephrenia—and this has not escaped the notice of Morel—is a psychosis of degeneration, a congenital defect which remains latent during childhood and the early period of puberty, showing itself when the subjects are affected by the inexorable exigencies of life, or are called upon to make intellectual efforts of which they are incapable. Moral insanity cannot be mistaken for hebephrenia beyond its characteristic symptomatology; it remains stationary for a long series of years, whilst in hebephrenia the intellectual loss is precocious. In hebephrenia the delusions are absurd and unreasonable, like those in general paralysis, and this character, which is an attribute of dementia, serves to distinguish them from systematised delusions. It is possible to confound hebephrenia with *folie circulaire*, such as has been described by Falret, but it is to be remarked that in *folie circulaire* the courses of mania and melancholia do not exclude a certain degree of lucidity which never occurs in hebephrenia, on account of the dementia; and the complete remissions observed in the latter never occur in the former. From the point of view of frequency, it can be affirmed—a neuropathic or psychopathic predisposition being admitted—that hebephrenia is that form of cerebro-mental disease which most frequently makes its appearance during adolescence. This fact is, however, only verified as regards men. Amongst females hysterical insanity is its equivalent. Kata-tonia and hebephrenia have so many points in common that it is often difficult, if not impossible, to distinguish them, for the spas-

modic or cataleptic condition met with in the former is also often present in the latter, and one form may succeed another. In katonias, however, recovery often ensues; hebephrenia, on the contrary, is absolutely incurable.—Dr. Adam in the *Annales Méd. Psychol.*, Nov., 1882.

Dr. Burr (*Transactions of the Michigan State Medical Society*, 1882), under the title “Insanity of Masturbation,” discusses the characteristics of the same form of insanity to which the name hebephrenia was originally given by Kahlbaum. Dr. Burr, who has certainly overrated the influence of masturbation in its production, gives a very clear description of the symptoms, and calls attention to the fact (so often observed) that sexual ideas and religious delusions are almost concomitant. He refers this, like Skae, to remorse—an opinion which does not appear to be well-grounded. Sexuality and religion both belong to the sphere of the emotions, and in the close relation between those is to be found (probably) the explanation of the religious motives of sexual lunatics. Dr. Burr gives the following symptoms of hebephrenia:—

1. An intense vanity, or self-love.
2. Extreme selfishness and disregard for others.
3. Religious delusions and perverted moral sentiments.
4. Delusions referable to the sexual system.
5. Aural and visual hallucinations of a certain definite character.
6. Emotional disturbances.
7. Homicidal and violent impulses.
8. Physical disorders referable to an impaired nervous system.—*Am. Journ. of Nerv. and Ment. Dis.*

Primary Monomania.—Dr. G. Buccola (*Revista Speriment. di Freniat.*) discusses, under the heading “Primitive Systematised Insanity,” the “primäre Verrücktheit” of the Germans. According to him there are four great groups of this form of insanity:—First, systematised insanity of the hypochondriacal type; second, systematised insanity of the chronic type; third, systematised insanity of the acute type; and fourth, systematised insanity of the peculiarly primitive or original type. The so-called acute form of primäre Verrücktheit is really a type in which psychical phenomena are periodic or episodial in character. Buccola is not inclined, like Westphal, to regard katonias as a variety of primäre Verrücktheit, and very properly, as such views tend to extend the term primäre Verrücktheit till it and insanity are synonymous. He is inclined to regard with favour the view which puts the true primäre, or rather originäre, Verrücktheit into the group of insanities due to teratological defect.

The Ætiology of Progressive Paresis.—Dr. E. C. Spitzka, writing in the *Chicago Medical Review*, considers that the vasomotor system plays an important part in the ætiology of this psychosis. This view, which Dr. Spitzka has modified from Poincaré and Bonnet, certainly explains much that is mysterious in the ætiology of the disease. As Dr. Spitzka says, the supposition of a strictly inflammatory process is incompatible with the occasional appearance of epileptiform spasms, not followed by those immediate sequelæ which should follow such an inflammation, and this theory is incompatible with the very rapid and relatively complete remission of the symptoms. He cites the fact that certain of the physical causes do not always act through the channel of a meningitis or other inflammatory process. In Dr. Spitzka's own observations, every patient dying during an epileptiform state, or with apoplectiform symptoms, presented the capillary emboli described by Lubimoff as characteristic of a blood stasis, which stasis he considers the expression of a paralysis of the muscular coat of the blood-vessels over-distended by the efferent blood current, in itself an indication of hyperæmia—a cortical hyperæmia, which would explain the expansive ideation and the motor excitation, the arrest of the blood current through stasis, and the subsequent congestion and comatose state. A sudden stasis causing sudden arrest of the cortical functions would satisfactorily account for the epileptic manifestations. A cortical hyperæmia as a factor that may, on the one hand, vanish with the most violent storm sweeping over the mental plain, without leaving a permanent defect, and, on the other hand, in its repeated recurrence determine those structural changes which account for the permanent symptoms of the disease, would also, in its necessarily progressive severity, account for the progressively greater gravity of each exacerbation, and the final preponderance of symptoms of subtraction, such as paralysis, lacunæ in the memory, aphasia, and coma, over those of functional excitation, such as destructive tendencies, constructive schemes, ambitious delusions, and the flight of ideas, which are prominent in the earlier periods of the disease. As the disease progresses, and the resistant tone of the vessels decreases, more and more stasis is found to occur not only in the exacerbations of the disease, but also in the interval—here more restricted in extent and less pronounced—so that, with a proper manipulation of histological specimens, he is prepared to say that no lesion will be found so constantly in the terminal periods of the disease than capillary thrombi, resulting from stasis-like con-

ditions. Of course, with this explanation we are as much in the dark as ever as to the organic basis of the vasomotor difficulty Spitzka claims that this consists in a probably impalpable morbid state of the encephalic vasomotor centre. Such a morbid state it requires no stretch of theory to consider inducible by mental overstrain, by the repeated hyperæmias of alcoholism, rheumatism, and certain forms of syphilis, or by typhus fever, sunstroke, and the molecular disturbances determined by concussion directly or indirectly involving the skull's contents.

Dr. Spitzka's observations have been corroborated to a certain extent by Dr. Grieve, the Medical Superintendent of the Colonial Lunatic Asylum, Berbice, British Guiana. Dr. Grieve was familiar with progressive paresis in England, and it is certainly impossible that he should fail to detect it when present; yet, out of seven hundred lunatics under his care, but one was a case of progressive paresis—a percentage of about one ninety-eighth of that of England. The patients are of various races. Creoles and East Indians make up about four-fifths of the asylum population, the remaining fifth is principally composed of negroes and Chinese. Europeans form about one and a-half per cent. of the asylum population, and yet the only case of the psychosis is a European. All the alleged causes of progressive paresis are markedly present except one, mental excitement. Dr. Grieve comes, therefore, to the very sound conclusion that this is a very potent factor in the production of the psychosis. In this conclusion he is not entirely original. Austin long ago expressed a similar opinion, and so did Crichton Browne (*West Riding Asylum Reports*, Vol. VI.). The appearance of the disease amongst the various races mentioned, when they are exposed to mental strain, certainly tends to confirm this opinion.—Dr. Kiernan in the *Am. Journal of Nerv. and Ment. Dis.*) [Mental excitement cannot be said to be absent from Ireland, and the other factors mentioned are also all equally potent, and yet, as is well known, cases of progressive paresis form but a very small proportion of the asylum populations throughout the country; so that though mental excitement may be an adjunct in the ætiology of the disease, its ultimate cause is yet to be found.—*Rep.*]

Paralytic Dementia (Progressive Paresis) in its connexion with Arterial Atheroma and Yellow Softening.—Dr. Cullerre contributes to the *Annales Méd. Psychol.*, May, 1882, the results of his researches in this direction. The author quotes some of the most

recent authorities on the subject, and records a number of pathological observations, from which he draws the following conclusions:—1. There exists a form of paralytic dementia which is characterised at one and the same time by the ordinary lesions of meningo-encephalitis, and by those of cerebral senility, atheroma, miliary aneurisms, and patches of yellow softening. It develops in general at an advanced age, pursues a more or less slow course, and may terminate rapidly at the end of a congestive attack, accompanied by acute maniacal excitement. The diagnosis can be made during life by the aid of the sphygmograph and auscultation over the aorta. The psychic and somatic symptoms possess at one and the same time the characteristics of senile dementia and general paralysis. 2. Amongst certain senile dementes there occur congestive attacks which often terminate in inflammation of the cortical substance of the brain and determine lesions, macroscopic at least, of general paralysis. These fluxionary changes probably retrograde in certain cases, the symptoms of general paralysis disappearing, while those of organic dementia then become pronounced.

Alterations of the Cerebral Cortex in the initial stage of General Paralysis.—Dr. Mendel (*Neurologisches Centralblatt*) reports a case of general paralysis diagnosed only *post mortem*, in consequence of the character of the delusions, and the absence of physical symptoms having led to the case being regarded as one of melancholia. The microscopic examination of the brain caused the diagnosis to be rectified. The presence of some milky spots on the pia mater was ascertained, and a morbid condition of the floor of the fourth ventricle. The microscope revealed an alteration of the layers of connective tissue in the cerebral substance, characterised by an exaggerated production of the connective element, without any change in the nerve elements proper. This lesion was most marked at the base of the brain at the level of the centres for the localisation of speech. The blood vessels were in a normal condition.

According to the author we have here an anatomo-pathologic fact of importance, and one which shows that in general paralysis the starting point of the lesion is in the connective tissue element of the brain substance, that the nuclear proliferation, the vascular alterations, and the emigration of the white corpuscles, do not occur at the outset of the affection; and, finally, that the early trouble of speech amongst general paralytics may be due to the fact that the lesions occur earlier and with greater intensity at the

base of the brain and at the level for the centres of the localisation of speech.—Abstracted in *Annales Méd. Psychol.*, Nov., 1882.

Claus on the Tendon Reflex in Dementia Paralytica.—The author was enabled to test Westphal's assertion, that absence of the tendon reflex is pathognomonic of sclerosis of the posterior columns in progressive paresis, by making a careful examination in nineteen cases, which he studied both during the lives of the patients and after their deaths. In all cases where pronounced sclerosis was found, the knee phenomenon had been absent. In several instances where the sclerosis did not extend below the sixth dorsal nerve-level, and even in two where slight sclerosis extended into the lumbar portion of the cord, the phenomenon was present. In another group of cases where sclerosis of the posterior columns was either absent or ill-marked and the lateral columns were degenerated, the phenomenon was pronounced or exaggerated, especially with exacerbations of the malady, such as the paralytic attacks. The influence of such attacks, ordinarily termed "apoplectiform" attacks by English writers, was also observed where the reflex was nearly abolished by the spinal lesion becoming better marked therewith. The same influence is attributable to the so-called epileptiform attacks (this is a strong argument in support of the position of those who assume a vascular stasis and consequent hemispheric malnutrition as the common basis of both phenomena). Where the attacks were unilateral the tendon reflex was occasionally most marked on the affected side. The inference is a just one that, where the tendon reflex cannot be evolved even during apoplectiform and epileptiform attacks, the sclerosis has affected the posterior columns in the lumbar altitude, and to an extreme degree. Where degeneration of the lateral columns was the sole and predominant spinal lesion, Dr. Claus found a different kind of gait from that manifested by paretics who had pronounced posterior spinal sclerosis. In the latter the ataxic character was discoverable, but in the former the gait had rather a paralytic character, and it is in such cases that the evident paresis increases till the patient loses the power of walking altogether. Only in a very few cases did the gait approximate the spastic character, and on the other hand there was found, even with patients whose posterior columns showed slight degeneration, rather a paretic than an ataxic walk. Somewhat novel is the author's supposition that a degeneration of the lateral columns may progress up the pyramidal tract to the cortex. Although the author believes that the

clinical pictures of a subdued spastic paralysis may be more frequent with progressive paresis than is ordinarily supposed, it does not appear that he was himself able to make any diagnostic inferences during the lives of his patients as to the state of the lateral columns with any degree of certitude. When it is borne in mind, too, how easy it is by careful search to determine slight alterations in either the lateral or posterior columns in paretics, the margin of error must be apparent. Westphal has recently affirmed quite positively that the tendon reflex disappears when the external part of the posterior columns is involved. Dr. Claus furnishes the interesting statement bearing on this claim, that where the tendon reflex remained in cases of posterior spinal sclerosis involving the lumbar enlargement, the sclerosis occupied the innermost portions of those columns only. This is strongly corroborative of Westphal's claim.—Abstracted in the *Am. Jour. of Neurol. and Psychiat.*

Syphilis of the Spinal Cord.—Grieff of Heidelberg, in the *Arch. für Psych. und Nerv.*, calls attention to the imperfection of our knowledge of this subject compared with that of cerebral syphilis. The anatomical changes found in the latter consist of specific neoplasms, either as circumscribed gummata or diffused gummatous infiltrations, specific inflammatory processes of the meninges and adjacent cerebral substance, and, finally, syphilitic disease of the cerebral arteries and its effects, first described by Heubner. Reviewing the literature of syphilis of the cord he finds (1) cases of circumscribed gummata, in some originating from the envelopes of the cord, and in others developing within the cord itself (cases of Rosenthal, MacDowell, Willis, Wagner, Hales); (2) diffused neoplasms (cases of Zambaco, Bruberger, Westphal, Heubner); (3) inflammatory changes in the meninges associated with further changes in the cord itself (cases of Homolle, Winge, Charcot, and Gombault, Schultze, and Julliard). No description is to be found of specific disease of the vessels of the spinal cord. The dilated vessels with thickened walls surrounded with cellular infiltration described in some cases, as they appear under other circumstances also, cannot be acknowledged as specific. The same doubt must remain in all cases where inflammatory processes of the cord and membranes are unaccompanied by specific gummatous tissue, and, notwithstanding many attempts, the problem of determining the characteristic anatomical relations of syphilitic myelitis remains, he thinks, unsolved. He gives an abstract of thirteen cases, with autopsies, and refers in detail to Julliard's views, who considers

that the combined presence of inflammatory processes in the meninges of exudative processes in the vessels and their sheaths, and then hyperplasia of the neuroglia, with its effects upon the neural elements, constitute the characteristics of syphilis of the spinal cord. As the pathological processes involve principally the lymphatic system of the cord, entering through the meninges, the neuroglia, and the vascular sheaths, it results that the changes may be diffuse, but they cannot constitute a systematic disease. If the process be a rapid one, softening follows—if slow, sclerosis. The author reports very fully a case observed by himself, in which the changes consisted of an extensive inflammation of the pia mater, in some portions just beginning, in others in an advanced stage; decided disease of the arteries and veins, also a swelling and hyperplasia of the interstitial tissue, with inflammatory exudations round the vessels, and moderate involvement of the neural elements. The arterial changes were the same as those described by Heubner for the brain, observed in the cord for the first time. A peculiar obliteration of the veins also existed. No softening or decided “systematic” lesion was found. He concludes that the facts of this case support Julliard’s views, and furnish undoubted proof of the existence of a syphilitic disease of the arteries of the cord; but while the changes in the meninges and vessels appear to be undoubtedly of a specific character, the changes in the cord, on the contrary, exist only in connexion with and dependent upon the former, which together represent the true character of syphilis of the spinal cord.

On the Muscular Atrophy following certain Articular Lesions.—Professor Charcot, in *Le Progrès Méd.* (May 20, 1882), considering this question, says that the clinician must be on his guard in the presence even of a very slight inflammation of a joint; it may disappear very quickly, and yet consecutive atrophy of the muscles may last for a very long time. There is no necessary relation between the intensity of the articular affection and that of the paralytic and atrophic phenomena. It is the rule for the paralysis to persist after the arthritis has ceased. In such cases a more or less direct relation must exist between the cells of origin of the motor and trophic nerves of the extensors. From a physiological standpoint it is a deuteropathic affection of the cord. The articular disease having, by means of the irritated articular nerves, reacted on the spinal centres, modifies those centres from which depart the motor nerves and those which preside over the nutrition of the

muscles. Those centres do not undergo a profound modification, the process simply consisting of a sort of inertia or stupor of the cellular neural elements. The treatment consists in the application of electricity in any of its forms.

Note on the Pathological Anatomy of Diphtheritic Paralysis.—E. Gaucher (*J. de l'Anat. et de Phys.*), in a case of paralysis of the palatal muscles and paresis of the extremities, following diphtheria, in a child two years of age, which terminated in death after one month's duration, a careful examination of the nervous system gave an absolutely negative result. A second case was that of a boy, aged eleven years, affected with diphtheria, followed by paralysis of the throat muscles later, involving the extremities and the muscles of the back, and resulting in death from asphyxia twenty days after the commencement of the paralysis. On microscopical examination the brain was found hyperæmic only. In the anterior roots of the cord about one-third of the fibres exhibited marked changes, consisting of complete absence of the medullary sheath, increase in number and size of the nuclei, while the axis cylinders appeared perfectly normal. No changes were found in other parts of the nervous system. The manner in which the medullary sheath may have been lost is not described. No granular corpuscles were found; the neurilemma was normal.—*Am. Journal of Nerv. and Ment. Dis.*

IV. NEURO-THERAPEUTICS.

Percussion as a Therapeutic Agent in Nervous Diseases.—Dr. J. Mortimer Granville, in an article in the *Brit. Med. Jour.*, March 11, 1882, says—"I have for some years past been employing carefully graduated and precisely applied percussion as a therapeutic agent in the treatment of nervous diseases and disturbances, based upon the hypotheses — (1) That all nerve action, whether normal or morbid, is vibratile; and (2) that it is possible to influence and control abnormal vibrations by mechanical vibrations, propagated to the nervous structures in *particular* directions and at *known* rates of speed." In order to produce these vibrations he has had constructed a "percuteur," or percussion hammer, the most recent modification of which is set in rapid motion by electricity, and applied upon the skin over the nerves which it is desired to act upon. He does not yet wish to discuss the hypotheses or method in detail, but advances the following propositions, founded on experience:— "1. I have rarely failed (he writes) in a fairly large

number of cases, many of them of several years' standing, to bring the cerebro-spinal and—sometimes directly, at others in secondary circuits—the sympathetic ganglia under control by the application of my percuteur over, or in mechanical relation through, the adjacent tissue with those ganglia. 2. I have in no instance failed to produce activity of the bowels, even in cases of previously obstinate constipation, and in many instances I have succeeded, within a short period, in restoring the periodic evacuation of their contents without having recourse to drugs. This success alone places the method on a footing of value in daily practice. 3. I can now, as the result of my more recent experiments, propagate the vibrations I produce along the trunks and into the branches of the principal nerves from their centres of origin, or call them into action reflexly through the afferent nerves connected with these centres. In limited paralyses, and even in circumscribed sclerosis, this power is obviously of the highest therapeutic importance. 4. I can nearly always arouse torpid centres to action, and thus pave the way for their restoration to states of normal activity. Since it is physiologically certain that nutrition depends on exercise, and every part of the organism feeds in proportion as it works *healthily*, it is a great thing to be able to act thus directly on the nerve centres, which are the seats of energy. 5. I can subdue the exaggerated reflex irritability of revolting subordinate centres, and replace them under the control of the higher centres, even in cases of lateral sclerosis." This method, he adds, has nothing in common with the "muscle-beating" and "shaking" introduced recently into this country.

In a further note on the same subject, more recently published, Dr. Mortimer Granville states that he has accumulated a considerable mass of evidence, which goes to show that locomotor ataxy and the ataxy due to syphilis may be greatly benefited, if not actually cured, by precise "nerve vibration" by means of the percuteur. He cites some interesting facts concerning the influence of the percuteur in modifying reflex irritability in locomotor ataxy, and has found that in ataxy from syphilis the nerve vibration has often the curious effect of revivifying the original syphilitic disease, which may have lain dormant for years; and this, he says, is a point which should be borne in mind when thus treating this affection.

The Treatment of Locomotor Ataxy by the Faradic Brush.—Dr. Rumpf, of Dusseldorf, has employed the faradic brush in a series

of cases of locomotor ataxy. He places the positive pole on the sternum, and draws the brush, which is in connexion with the negative pole, down the back as far as the extremities. The effects have been in general very good. The author cites in particular two observations in which all the symptoms of locomotor ataxy have disappeared. The troubles of motion, the fulgurant pains, the giedling pains, and the troubles of sensibility receded under the faradic treatment. There persisted the phenomena of the absence of the tendon reflex in the first subject and impotence in the second. The results, however, have not always been as successful, and in other cases the author has observed either a disappearance of an isolated symptom, such as the trouble of sensibility, pain, &c., or a general amelioration of the symptoms. In other cases the advantages obtained have been but temporary. Without constituting the treatment a specific for locomotor ataxy, the author believes that it is strongly indicated in many cases, especially where the disease is of recent onset and not connected with syphilis.

Nerve-stretching.—*Progrès Médical*, March 11, 25, and April 15, 1882. Review by Duret and Bonnaire.

Idiopathic Sciatica.—Eleven cases treated; nine successful.

Symptomatic Sciatica.—(Diseases of the Spinal Cord).—Eight cases treated. In one apparent cure; in five marked alteration of symptoms; and in two no change resulted.

Trigeminal Neuralgia.—Different branches were stretched in twelve cases; complete relief occurred in nine, partial in one, and no relief in two cases.

Intercostal Neuralgia.—One case treated with no relief.

Idiopathic Neuralgias of various Nerves.—Five operations (four on the brachial plexus), with two complete and three partial recoveries.

Traumatic Peripheral Neuralgias.—Eleven cases operated on, of which eight recovered completely, two partially, and one not at all improved.

Spasmodic Facial Tic.—Six cases; all successful.

Torticollis.—Six cases; two failures.

Contraction of Extremities.—Three cases; one failure; two cases improved.

Epilepsy.—Three cases; recovery in one, amelioration in one, and failure in one.

Paralysis.—One case, in which recovery ensued.

Tetanus.—Twenty-one cases, with nine recoveries and twelve deaths.

Locomotor Ataxia.—Ten cases; one case relieved once, and on reappearance of pain was subjected to another operation, and died under chloroform; one death from thrombosis of popliteal vein; two complete failures, and in six cases amelioration of the symptoms.

Lepra Anæsthetica.—Three cases; rupture of the nerve in one, but good results in all! (?).

Mr. Davidson, in the *Lancet*, records three cases of sciatica cured and one relieved by nerve-stretching, while a facial spasm was relieved by stretching the infra-orbital nerve.

The Dangers of Nerve-stretching.—Dr. Julius Althaus, in referring to the dangers of the operation of nerve-stretching, says “that at least five cases where death ensued have been already recorded—one by Socin, another by Langenbuch, who originated the operation, a third by Billroth and Weiss, a fourth by Berger, and a fifth by Benedict. In most of these cases the cause of death appears to have been undue violence used in stretching, whereby the medulla oblongata would appear to have received a shock. Thus in Benedict’s case severe vomiting and singultus, together with complete paralysis of the bowels and bladder, supervened after the operation; dyspnoea and cyanosis eventually set in, and the patient died comatose on the ninth day.—*Brit. Med. Journ.*, Jan. 7, 1882.

The use of Atropine as a Sedative.—Dr. J. R. Gasquet, in a paper in the *Journal of Mental Science*, April, 1882, states that he has used atropine as a substitute for hyoscyamine in the treatment of three cases of chronic insanity which had before been treated by hyoscyamine. The treatment lasted in two cases three months, and two months in the other. He concludes atropine is much the weaker sedative, as the patients are less subdued and helpless and in a much more natural and healthy condition than when treated by hyoscyamine. The effects of atropine are much more transient. Very often the pupils are not dilated, but generally the throat is very dry before the sedative dose is reached.

A Case of Hydrophobia Cured.—M. Dennis-Dumont, Surgeon-in-Chief of the “Hotel Dieu” of Caen, communicated to the Academy of Medicine *séance* of June 13th the case of a man, aged thirty-eight years, who, attacked with hydrophobia, was brought to the hospital at Caen the 23rd of last May, the man having been bitten on the 16th of the same month, also a woman and a little

child, by a vagrant mad dog. The treatment consisted of bromide of potassium, a drachm to two drachms a day, syrup of codeine and chloral internally, and of subcutaneous injections of pilocarpine, repeated at first three times a day, afterwards twice daily. Under this medication the crises were diminished more and more, the dysphagia lessened and finally ceased; the agitation disappeared, the appetite revived, and in about five days the cure was considered to have been complete. [Query, was this a true case of hydrophobia?—*Rep.*].—*Alienist and Neurologist.*

Charcot's Treatment of Menière's Disease.—In the *Rev. de Méd.*, Oct., 1881, Ch. Feré and A. Demars, in a brief clinical paper, outline the disease, and adduce illustrative cases to substantiate their claim as to the value of the treatment. They give .60 to .80 grammes of quinine a day in .10 doses for eight to fifteen days, not allowing an exacerbation of symptoms to interrupt the treatment at all. They then stop treatment for an equal period, and then resume again. At first there is always increased tinnitus and vertigo, and even falls occur. During the first stoppage of treatment there is generally a notable diminution of tinnitus, but the vertigo usually remains. During the second administration the aggravation of the symptoms is less marked than the first time and may be wanting. During the second rest there is a great diminution in the noise and often in the vertigo. Gradual improvement is seen with each period of repose. The vertigo is the last to disappear. Finally both tinnitus and vertigo cease, but still the patient has not perfect equilibrium, and presents an unstable attitude. It is important to warn the patient of the first effects of the treatment, and also impress him with the fact that only by a long persistence can he hope for lasting improvement.—*Am. Journ. Nerv. and Ment. Dis.*

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. BANKS, M.D.
General Secretary—W. THOMSON, M.D.

PATHOLOGICAL SECTION.

President—J. M. PURSER, M.D.
Sectional Secretary—E. H. BENNETT, M.D.

Friday, December 1, 1882.

The PRESIDENT in the Chair.

Opening Address.

The President of the Section, PROFESSOR PURSER, opened the Session with a brief Inaugural Address. In the course of his address Dr. Purser dwelt particularly on the waste of pathological material which takes place in many of the hospitals of Dublin, and on the disadvantages that attend the making of *post mortem* examinations by gentlemen who have received no training in pathological anatomy. He suggested that this difficulty might be obviated by the appointment to each hospital, or group of hospitals, of a Pathologist who had received some instruction in pathological anatomy and *technique*. His business should be to attend when required to make autopsies, and to dictate the notes to be taken there and then. Dr. Purser laid special stress on the fact that, in spite of its great development as a centre of medical teaching, up to the present time neither university, nor college, nor private school in Dublin, had supplied any systematic course of instruction in pathology. He further urged the necessity of endeavouring to impress on the examining bodies a sense of the great importance attaching to a knowledge of pathology.

Primary Lupus of the Conjunctiva.

MR. ARTHUR BENSON, F.R.C.S., showed a girl, aged fifteen, delicate looking, of strumous habit, free from lupus or other scars over the body. In May, 1879, her right eye began to feel sore at the inner angle; she came to St. Mark's Ophthalmic Hospital on May 29, 1880, where some "lump" was cut off from over the right inferior punctum (the notes then taken cannot be found). Six months after her return home, November, 1880, the left eye became affected in a similar way, and has since become the worse of the two. For the last year she has noticed a stiffness of the nose, especially on the left side, and ascribes it to a constant cold in the head; her nose often bleeds a little when she blows it, but never to any great extent. Pain in the eye, or photophobia, has never been present. *Present Condition:—Right Eye:* The region of the inferior lachrymal punctum is occupied by a cicatrix; the conjunctiva of the lower lid is somewhat thick and velvety. On the conjunctival surface of the upper lid a prominent granular mass is localised. *Left Eye:* Some eversion of lower lid at the inner extremity. The inferior punctum is occluded, and its position occupied by an elevated mass, the centre of which is ulcerated. The lachrymal sac is obliterated; fluid syringed through the superior punctum and canaliculus regurgitates without dilating the sac. Along the inferior cul-de-sac of the conjunctiva there exists a more or less wedged-shaped mass of thickened fleshy conjunctiva, which bleeds rather readily on being probed. The ocular conjunctiva, and the conjunctiva of the upper lid are normal, or nearly so. No passage can be found through the inferior punctum into the lachrymal sac or nasal duct. The mucous membrane of the nose, as far as can be seen with a speculum, appears swollen, and covered with a granulation-like surface which bleeds easily. The cornea is normal, and vision is perfect. The slowness of growth, absence of irritation, peculiar appearance of the growth, its spreading into the duct, &c., seem to point to lupus.

Hodgkin's Disease.

MR. WILLIAM THOMSON exhibited a patient, aged twenty-six, with well-marked Hodgkin's disease. There was a large tumour in the left axilla; the glands at the root of the neck were much enlarged; the right lung was infiltrated in its upper half. The veins in the front of the thorax were all enlarged and varicose, this condition being marked above a transverse line drawn through the ensiform cartilage. The patient suffered much from dyspnœa at night. In the morning his ears were always quite purple, but this condition improved as he moved about. He was well nourished. There was no excess of white corpuscles, and there were no symptoms except the dyspnœa, and occasional pains in the arms. The disease had existed for fourteen months.

Pathology of Hodgkin's Disease.

DR. FINNY exhibited the viscera of a patient who died of Hodgkin's disease. The patient was aged seventeen, the son of healthy parents; two years ago he exhibited enlargement of the lymphatic glands in the neck. The cervical, mediastinal, bronchial, and retro-peritoneal glands are enlarged, and adenoid nodules occur in the spleen. The blood at no time exhibited an increase of white corpuscles. [The further details of the case are reserved until the report of the Committee of Reference on the specimens is brought up.]

The Bacillus of Tubercle.

Microscopic mountings of this bacillus were exhibited by MR. P. S. ABRAHAM, M.A., B.Sc., F.R.C.S., prepared according to Dr. Heneage Gibbes's method. The bacilli were seen as small red lines, the other elements of the spectrum being stained blue.

Illustrations of Rare Skin Diseases.

DR. A. W. FOOT.—(1.) Photographs of pachydermatocele (von Mott), taken from a woman, married, aged thirty, never out of Ireland. The disease had existed nine years; origin attributed to a severe wetting, followed by irritation of the inguinal glands; nates and genital organs unaffected. Died four days after the removal of the large mass springing from the posterior femoral region.

(2.) Drawing of ichthyosis vera, from a peasant boy, aged eleven, affected from early life, but not born so. Discharged from hospital free from scab, scale, or roughness after five weeks' treatment, consisting of warm baths, cod-liver oil internally, inunction of a compound of isinglass and glycerine.

(3.) Drawing of diffuse melanomata from a washerwoman aged fifty-seven, whose right eye was excised for melanosis. Five years afterwards she was in the condition represented in the drawings, studded all over with melanotic tumours of various sizes.

Fractures of Patella.

DR. E. H. BENNETT.—Fracture of the right patella completely united by bone. The specimens are the patellæ of a female, of which the bone of the right side exhibits distinct evidence of an united comminuted fracture repaired by perfect osseous union. The left patella exhibited for the purpose of comparison. The fractures of the right patella are in the main vertical in direction, but at both the upper and lower parts of the bone they pass laterally through its structure. There was a scar in the integuments covering the centre of the bone, which was adherent to the anterior surface of the lines of fracture, suggesting (in the absence of any history) that the fracture was the result of direct injury, and probably

compound. Both knee-joints were slightly affected by chronic rheumatic arthritis, the right only a little more developed than the left.

Fracture of the left patella of a man united by fibrous tissue. The man from whom this specimen was obtained was of powerful build, a labourer, aged thirty-five. Three years before his death (which occurred recently from a blow in the epigastrium in a fight) he was treated in Sir Patrick Dun's Hospital by the exhibitor, for the ordinary transverse fracture of the patella. The specimen is of interest as showing the great strength and completeness of the fibrous band which unites the fragments. The surfaces of the femur and tibia in the knee-joint showed little or no trace of disease, only the cartilage of the femoral trochlea was a little dull in polish where the fibrous union of the fragments of the patella lay in contact with it.

Double Fracture of the Lower Jaw.

MR. P. S. ABRAHAM, M.A., B.Sc., F.R.C.S.—A comminuted fracture exists in the region of the right mental foramen, its principal line passing down from between the bicuspid to the anterior margin of the foramen, at the level of which it bifurcates. A triangular piece, with a base 1.5 cm., is thus separated off from the lower margin of the jaw, and chiefly at the expense of the inner surface of the bone. The obliquity of the plane of the fracture is for the most part from behind, forwards, and inwards. No teeth are displaced or loosened, and there is no evidence of the fracture having been compound. A second fracture is situated on the left side of the jaw, extending from behind the last molar, of which the alveolar socket is peculiarly expanded down to the angle. This fracture was compound, communicating with the mouth. The probability is that the fracture of the left side of the body was produced by a direct blow or kick, while that of the left angle was due to indirect violence. History by DR. BRERETON (Oughterard):—The subject was a man, aged thirty-six. From evidence given before the coroner the fracture was inferred to be the result of a kick while the man lay on the ground. On the fourth day after the receipt of the injury he got out of bed, walked from his house a short distance, and on returning fell dead at his own door. The *post mortem* examination showed that the fracture at the angle was compound, communicating with the mouth, and that the abscess had formed in connexion with it. This abscess was traced from the parotid region down along the carotid into the pericardium. The other fracture was simple, but comminuted as seen in the specimen.

Excision of Elbow-joint.

MR. H. G. CROLY.—Patrick H., aged twenty-one years, admitted to the City of Dublin Hospital, Oct. 30, 1882, suffering from disease of the elbow-joint following an attack of acute rheumatism. The joint was enlarged

and painful. There was also an elasticity about the joint, indicative of a condition only to be relieved by resection. The patient suffered much from pain and startings of the limb. Pus flowed freely from the joint at the time of the operation. The synovial membrane was in the condition of pulpy thickening, and the cartilages were invaded. The bones were affected only immediately beneath the cartilage.

Loose Cartilages from the Knee-joint.

MR. WHEELER.—The cartilages shown were removed by the exhibitor in the City of Dublin Hospital, from the right knee-joint of a patient named Richard C., in March last. There was no history of gout or rheumatism, or of his having received any injury of his joint. He first noticed these foreign bodies two years ago; he suffered much distress from them, being often seized with severe pains and unable to walk or move his joint for some time. Considerable inconvenience was caused by their being quite free and unattached; they could be easily felt under the quadriceps muscle or at the inner side of the knee-joint; they are new formations, rather roughened on their surfaces, and made entirely of cartilage. One measures over two inches in length and one-and-a-half inches in width; the other two inches in length and over two in width.

Loose Cartilage from the Knee-joint.

MR. COPPINGER.—The cartilage was excised from the left knee of I. C., a man, aged thirty, who had suffered for two years from weakness and enlargement of the joint, with occasional attacks of severe pain. It was removed successfully by free incision made under the usual Listerian conditions. On exploring the inside of the joint with the finger, the femoral and patellar cartilages were found to be normal, but the outer semilunar cartilage of the tibia felt thickened round its edge, and presented an angular instead of the usual curved outline. The microscopical section presents the usual appearance of articular hyaline cartilage.

Glioma Retinæ.

MR. STORY showed three specimens.—(1.) Right eye of a girl, aged four, enucleated in May, 1881, at St. Mark's Ophthalmic Hospital. Whole globe enlarged and filled with the new growth, which has perforated the cornea and formed an external intensely vascular tumour. The tumour extends into the optic nerve, and has also perforated the sclerotic posteriorly. Numerous hæmorrhages have occurred into its substance. Microscopically it exhibits the characteristic structure of glioma.

(2.) Right eye of a boy, aged six, enucleated in January, 1882, at St. Mark's Ophthalmic Hospital. The tumour springs from the internal granular layer, extends from the papilla almost, if not quite, up to the

ciliary processes, and in its widest part measures not quite 3 mm. The position of the lens is normal, but the retina and chorioid are both detached in places. The anterior chamber is abnormally deep, and the opposing surfaces of the iris and cornea are covered with a thick, white layer of small round cells, indistinguishable microscopically from pus corpuscles. The optic nerve is apparently healthy, and the external tunics are nowhere perforated.

(3). Right eye of a boy, aged four, enucleated in July, 1882, at St. Mark's Ophthalmic Hospital. Eye-ball enlarged and completely filled with a soft, yellowish tumour, which has surmounted the shrunken lens and occupied the whole anterior and posterior chambers of the aqueous humour. It does not adhere to the cornea, is more than double its normal dimensions at the porus opticus, and rapidly increases in size from that point up to the foramen opticum.

Nasal Polypi (muco-gelatinous).

MR. H. G. CROLY.—M. P., aged fifty-five, light-house keeper from County Waterford, admitted into the City of Dublin Hospital, May 24, 1882, suffering from nasal polypi. The nostrils were distended and the tumours projected. The sense of smell was lost. The patient was much worse in damp weather. Twenty-three polypi were removed of the muco-gelatinous variety. The patient left the hospital the following day much relieved.

Fatty Tumour with Cast.

MR. H. G. CROLY.—Ellen R., aged fifty-five, admitted to the City of Dublin Hospital, Nov. 20th, 1882, suffering from a large pendulous fatty tumour growing from the left shoulder. Weight $10\frac{1}{2}$ lb. It commenced to grow ten years ago as a small lump, increased very gradually at first; latterly it grew more rapidly. It had an elastic, almost fluctuating feel, and an undulating margin near the pedicle at the deltoid region.

Peculiar Vesical Calculus.

MR. ANTHONY CORLEY.—Calculus, shape irregularly ovoid, with numerous bosses projecting; symptoms of four years' duration. Extracted by lateral lithotomy, June 14, 1882. Longest diameter, $1\frac{1}{2}$ inches; weight, 420 grs.

Papers.—1. Case of Volvulus.

MR. J. K. BARTON.—Of the causes of intestinal obstruction that of twisting of the gut, or volvulus, is the rarest. It usually takes place in the large intestine, and most frequently in the sigmoid flexure. In the following case the cæcum appears to have been the part which was dis-

placed, and the ascending colon was, in consequence, twisted and the gut distended:—E. M., age about fifty-eight, a charwoman, while cleaning out a church, was suddenly seized with severe pain in the abdomen. She was admitted into the Adelaide Hospital on October 3rd. The abdomen was then found greatly distended, and unequivocal signs of peritonitis existed. No action of the bowels was procured, but the gaseous distension of the abdomen was so great as to require the operation of puncture twice. Patient died on the 8th, five days after admission, and eight after the sudden attack of pain. The autopsy revealed enormous distension of the cæcum and small intestine, with a rupture posteriorly of the cæcum with general peritonitis. The ascending colon was twisted so as completely to exclude the gut, and the large intestine below this point was small and empty. The cæcum must have accomplished a complete revolution on itself, as the vermiform appendix was behind, but distended to the size of the index finger.

DRS. MYLES, FOOT, FINNY, THORNLEY STOKER, CORLEY, WARREN, H. KENNEDY, and ABRAHAM, took part in the discussion which followed.

2. *Aneurism of the Internal Iliac Artery.*

DR. T. EVELYN LITTLE read a paper on this subject, and exhibited a specimen of the disease. Having demonstrated the anatomical details of the tumour, which was a true aneurism, he quoted the statistical tables of Crisp, of Norris, and of Hasse, showing the extreme rarity of aneurismal disease of the vessel.

3. *Nasal Polypus.*

MR. WHEELER read a paper on Nasal Polypus, illustrated by the exhibition of six specimens of mucous nasal polypi, one fibrous naso-pharyngeal polypus, and one mucous naso-pharyngeal polypus, removed from three patients. Having detailed the symptoms of interest in each case, and the individual characters of the tumours, he stated the opinions of Cornil and Ranvier, of Sabatier, Boyer, Lassus, Ambrose Paré, Boyard, Gerdy, Nelaton, and Robin, as to the structure and classification of these tumours, and described some of the errors in diagnosis which have occurred regarding them, referring particularly to observations of Syme and of Gerdy.

DRS. THORNLEY STOKER, CORLEY, and KENDAL FRANKS, joined in a discussion, and MR. WHEELER replied.

The Section adjourned.

SURGICAL SECTION.

President—JOHN KELLOCK BARTON, M.D., President R.C.S.I.

Sectional Secretary—WILLIAM STOKES, F.R.C.S.I.

Friday, December 8, 1882.

The PRESIDENT in the Chair.

Opening Address.

The PRESIDENT, in opening the proceedings, remarked that the old Surgical Society of Ireland, which, for over fifty years, held its Sessions in that College, had voluntarily laid aside its separate individual existence in order to be foremost in supporting the new Academy as its Surgical Section. While the name of the Society was changed, it would, in all important and useful respects, remain the same as before, the organisation of which it formed part giving completeness to its work. In effecting the transformation little change had been made, the Council of the Society being the Council of the Section. A happy selection had been made as Secretary in the person of a gentleman whose interest in the Surgical Society was proved by his many contributions to it. For himself, he was President in virtue of his office as President of the College. Reviewing the history of the Surgical Society on the occasion of the new departure was suggestive of a funeral oration rather than a triumphant wedding song, which was more appropriate to its union with the Medical, Pathological, and Surgical Societies; and, therefore, in his Inaugural Address he preferred to institute a comparison between the system of clinical surgery pursued here, and that which obtained in Paris, Berlin, and Vienna. Dublin stood second to no other city in the thoroughness with which the students were trained in the diagnosis and treatment of disease. At the same time, little was done to clear up those disputed surgical problems which could be solved only by the powerful logic of accurate statistics. The conditions of the Dublin hospital system favoured completeness of individual work and good clinical teaching, while the results which might be gained from the variety, value, and number of all the cases put together were, for want of unity, lost. This want could be overcome by the new Academy. In Paris the classes went round with the surgeons as in Dublin, and, in addition, the interns there, corresponding to the residents here, took private classes with permission to examine cases of which there were a great many, to illustrate each subject. In Berlin special clinical teaching could be had in almost any branch of surgery, and, therefore, favoured advance in special directions, though it might well be doubted if the system of specialities produced the best-informed practical surgeon, and

gave to the State and the Army men able to use skilfully all the resources of their art. In Vienna the same system was carried to a very high degree of perfection. The advantages of the continental system with their vast hospitals were obvious in stimulating original investigation and facilitating the collection of reliable statistics, and so arriving at sound conclusions as to the result of different modes of treatment or operation. In Dublin there were in proportion to the population quite as many beds available for clinical instruction as in Paris, Berlin, or Vienna. There were fifteen hospitals in Dublin, the average number of beds in each being 130, or nearly 2,000 beds, of which 900 were available for surgical cases and available for clinical instruction, but divided among eleven different hospitals with an average of 87 beds each, and these divided amongst not less than three surgeons, leaving each an average of from 20 to 30 beds. This resulted in thorough and practical instruction; but the experience of each surgeon was limited without co-operation, and thus the Dublin School of Surgery was prevented taking its place in the van of progress. By the new Academy this defect could be met. Here, as in a common centre, might be lodged the records of the cases in all the hospitals, each case under its proper heading, and thus would be formed a most valuable collection of reliable statistics. He hoped the Council would adopt his view, and invite contributions.

Trephining for Intra-cranial Abscess.

DR. KILGARIFF exhibited a patient on whom he had performed the operation of trephining on account of an abscess resulting from a fall in the hunting field. The patient was unconscious for two hours after the accident. At the end of a fortnight he was removed to Dublin, suffering much from pain over the upper part of the occipital bone on the right side, and also much gastric irritability and general debility. Any motion, such as driving, intensified the pain, and caused nausea. On examination a shallow depression, the size of a florin, was found, bound by a well-defined margin, at the situation where he complained of the pain. The diagnosis of fracture, with the subsequent formation of an abscess within the cranium at the seat of the lesion, was made. An exploratory incision was made down to the bone, and a small purulent collection was opened into. Subsequently the operation of trephining was undertaken; and on exploring the bone a small circular opening through the skull, about two lines in diameter, was discovered. Through this opening, situated on the upper part of the occipital bone, some purulent matter oozed. A circular piece of bone was then removed with the trephine to provide free exit for the pus. An abscess cavity, from which almost half an ounce of pus welled up, was opened into. The inner surface of the piece of bone removed was deeply eroded. The cavity of the abscess was washed out with a weak solution of carbolic acid. Subsequently the

patient experienced an attack of erysipelas of the head and neck, from which, however, he recovered, and nothing further occurred to interrupt the process of complete recovery of the patient.

Morbid Specimens.

MESSRS. KENDAL FRANKS, H. G. CROLY, A. BENSON, W. STOKES, WHEELER, V.P., R.C.S.I., and P. S. ABRAHAM, exhibited specimens.

Papers.—1. *Nephrectomy.*

MR. STOKES, Sectional Secretary, on behalf of MR. FRANCIS J. O'REILLY, Surgeon to the Trim Union Infirmary, exhibited a right kidney which Mr. O'Reilly removed by lumbar section from a patient, aged twenty-six, in that institution, who suffered from right kidney symptoms and pus in her urine. He read Mr. O'Reilly's communication on the subject, which disclosed that the girl was never free from a desire to pass water, so that her sufferings were of a truly agonising character. The quantity of urine passed daily was fairly normal, and the specific gravity ranged from 1015 to 1020. A favourable opinion was thus entertained of the capabilities of the left organ to discharge the increased functions with which it was about to be taxed. The operation was by the vertical lumbar, or post-peritoneal method, and was performed antiseptically. The vessels and ureter were secured by a whipcord ligature. The external wound was closed with interrupted sutures, and antiseptic dressings were applied. The patient suffered from vomiting during the late stages of the operation. The gland weighed eight ounces; and an abscess cavity at its superior extremity contained about two ounces of pus. The vomiting and depression which manifested themselves during the operation continued, and the girl sank, and died forty hours after the operation. About an ounce of urine was drawn off with the catheter previous to death, and did not contain a trace of pus. The kidney was a specimen of primary tubercular disease. A *post mortem* examination was not obtained, but the wound was investigated and found free from blood clot, and perfectly aseptic.

MR. ABRAHAM said small tubercles were visible below and on the external surface of the specimen.

2. *Dissecting Aneurism.*

MR. J. F. KNOTT read a communication on Dissecting Aneurism. The specimen exhibited was one removed from a body in the dissecting room of the Royal College of Surgeons. It was described by the student who first noticed it as presenting the appearance of a double-barrelled gun. Examination showed that the simile was just; for two parallel tubes, almost exactly equal in shape and dimensions, were found enclosed in a common sheath, and separated by a septum which presented but a very slight convexity to one side. More extended search showed a dissecting

aneurism of the aortic arch, which had originally engaged the transverse and descending portions, and for which the injection mass had passed between the middle and external coats, separating these along the whole length of the thoracic and abdominal segments of the vessel. It had also coursed along the whole length of each common iliac artery to their termination. It was remarkable that both the normal and adventitious tubes had received about equal portions of the injection mass. A portion of the laminated coagulum was found to project into the space between the external and middle coats of the vessel along which the injection had travelled. This form of arterial aneurism, first noticed by Mannion and afterwards fully described by Laennec, in typical cases allows the blood, after tunnelling some distance between the middle and external coats, to pass again into the vessel at some distance. Other forms have also been described (*a*) where the blood merely separates the coats over a greater or lesser area, and (*b*) where it perforates the tunica adventitia at some distance and becomes diffuse.

The doctrine of the primary formation of aneurism, and the classification of these tumours into true and false, was next discussed; then that of the organisation of the clot and of the treatment of aneurisms in general, in which Irish surgery has attained so many triumphs.

MR. TUFNELL said treatment might prolong life, but in the case of a dissecting aneurism restoration of health was impossible.

The Section adjourned.

MEDICAL SECTION.

President—WILLIAM MOORE, M.D., President K.Q.C.P.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, December 15, 1882.

The PRESIDENT in the Chair.

Opening Address.

The PRESIDENT delivered an Inaugural Address. Having alluded to the absorption of the Medical Society of the King and Queen's College of Physicians into the Academy of Medicine in Ireland as its Medical Section, he reviewed at considerable length the advances made in the diagnosis of disease, particularly within the last twenty-five years. He referred first to affections of the chest, differential diagnosis of which was now well-nigh perfect. In certain cases clinical observations of the temperature had proved of great use, and the most recent advance was the demonstration by Prof. Robert Koch of the germ origin of

pulmonary tuberculosis. To Laennec was due the elucidation of cardiac diseases, and to Traube in great measure the knowledge of the relations which may exist between these and renal affections. The diagnosis of valvular diseases had become very exact, but the precise value of murmurs as regards diagnosis and prognosis was apt to be over-estimated. Nor was the diagnosis of abdominal aneurism always an easy matter. Great advances had also been made in the study of specific fevers, especially the endemic fever of this country, enteric or typhoid fever. Again, much had been done in the localisation of cerebral and spinal diseases, among the more interesting of this class of maladies being hysteria, hystero-epilepsy, and hemianæsthesia. As regards the treatment of some of these affections he mentioned remarkable instances in which good results had followed the practice of metallotherapy.

Living Specimens.

MR. ARTHUR BENSON exhibited a case of well-marked retinitis albuminurica in a boy aged sixteen, without constitutional disturbance; DR. CHARLES F. MOORE a case presenting neuralgic symptoms in a man having remarkable patches of white hair, some of which were congenital; and MR. STORY a case of double zonular cataract.

Morbid Specimens.

DR. J. W. MOORE exhibited by card a specimen of diphtheritic inflammation of the throat; and MR. P. S. ABRAHAM microscopic sections from the same showing (1) diphtheritic deposit in the muscular tissue of the pharynx, (2) mycelium of fungus, and (3) degeneration of muscular fibre in diphtheria.

Papers.—1. The Causation of Left-side Pain.

DR. WALLACE BEATTY read a paper on the causation of left-side pain, drawing special attention to a form not sufficiently recognised, which was due to faecal accumulation, and removed by getting rid of the accumulation. The pain was felt over the lower few ribs on the left side, was associated with extreme tenderness on pressure upwards of the tenth or eleventh rib, scarcely any pain being felt on pressure of these ribs downwards, and was relieved when the side was pressed inwards with the flat of the hand. He explained its occurrence by the drag of a loaded colon on the pleuro-colic ligament, this constant drag setting up a state of extreme irritability in the nerves of that ligament, so that a painful impression was carried upwards along the left lesser splanchnic nerve to the spinal cord, and was transferred by the law of irradiation of sensations to the tenth and eleventh left intercostal nerves.

DR. WALTER SMITH said the pleuro-colic fold had not received the attention it deserved. It certainly was of considerable importance in the

investigation of abdominal disease. Dr. Beatty's arguments were valid as explaining certain kinds of left-side pain, but did not explain all kinds.

DR. WALLACE BEATTY did not wish it to be understood that he considered left-side pain was caused in every instance by faecal accumulation, but only in cases presenting the symptoms he had mentioned.

2. *Unilateral Paralysis of the Soft Palate.*

DR. WALTER SMITH related two cases of paralysis of the left half of the velum palati, and raised the question whether palatine paralysis was invariably to be regarded as a characteristic sequela of diphtheria, or whether it may not occasionally supervene upon non-diphtheritic forms of angina. Case I. occurred in a young lady, aged twenty-four, and the paralysis developed six weeks after an apparently simple ulcerated sore throat, for which she had been treated by Dr. Smith. Case II., a young lady, aged twenty-six, was affected with what was considered to be a simple relaxed sore throat unattended with ulceration. She remained in a weak and nervous condition, and shortly afterwards the left half of the palate was found to be paralysed. In each case the symptoms were similar—viz., difficulty of swallowing, nasal twang in the voice, and regurgitation of fluids through the nose. Both cases recovered completely. Dr. Smith submitted that it was not unreasonable to hold that catarrhal sore throat may now and then give rise to slight motor paralysis through partial implication of the nervous system or otherwise.

DR. HENRY KENNEDY said that diphtheria might exist without exudation. He had seen such cases in which paralysis followed.

DR. HENRY related a case which he had observed, corroborating Dr. Smith's view.

MR. H. G. CROLY said that the large majority of cases described as diphtheria were really cynanche.

MR. WILLIAM THOMSON asked, if paralysis occurred in the palate as the result of specific inflammation, why similar effects did not follow in other parts of the body where nerve filaments were concerned?

DR. J. W. MOORE alluded to the specimen which he exhibited, describing it as one of phlegmonous erysipelas of the throat in which diphtheritic conditions had supervened. He believed that paralytic symptoms occurred only in true diphtheria.

DR. FINNY considered the fact that other diseases were associated with paralytic symptoms confirmed Dr. Smith's view.

MR. W. STOKES doubted that paralytic symptoms followed inflammation other than those of a diphtheritic nature.

The PRESIDENT regretted that no information had been given as to the presence of albumen in the urine in Dr. Smith's cases.

DR. R. A. HAYES mentioned, in support of Dr. Smith's view, a case in

which chronic inflammation of the palate, resulting from excessive tobacco-smoking, gave rise to paralysis of the palate.

DR. WALTER SMITH, in reply, said that the paralysis in these cases might be the result of myelitis or of muscular degeneration. He answered Mr. Thomson's question by pointing out the rich nervous supply of the palate, and the muscles being open to attack from both sides.

The Section adjourned.

ACTION OF SALICYLIC ACID UPON THE SKIN.

WHEN applied to the skin salicylic acid is an agent causing the elevation, without the formation of a blister, of normal or pathologically thickened epidermis, in the form of a consistent whitish coloured membrane. The line of separation is always within the epidermal layers of the skin, and the stronger the solution of the acid, the deeper down (nearer the papillary layer) does dissociation take place. For all forms of callus, with or without hypertrophy of the papillæ, for psoriasis palmaris and plantaris, non-specific as well as specific, and for every variety of epithelial accumulation or hypertrophy, salicylic acid, by reason of it being colourless, odourless, and unirritating as well as painless in its application, is the best keratolytic (causing separation of epidermis) agent. In order to be efficacious in this direction it should be applied not in the form of a watery, ethereal, or alcoholic solution merely painted on, but in solution in collodion, ten per cent., or, better still, as a salicylic plaster covered with gutta-percha, and left in position for from four days to a week.—*Monatshefte für prakt. Derm.*, 1882, and *Boston Med. and Sur. Jour.*, Oct., 1882.

SUDDEN DEATH IN GASTRIC ULCER FROM ENTRANCE OF AIR INTO THE BLOOD VESSELS.

JURGENSEN has recently met with two cases of this nature, one of which he describes with considerable detail. A woman, aged forty-nine, had for years suffered from the symptoms of gastric ulcer, particularly from repeated exhausting hæmorrhages from the stomach, by which she was reduced to the last degree of anæmia; she died suddenly. At the autopsy, an ulcer six to seven centimetres in diameter was found on the posterior wall of the stomach; the pancreas, duodenum, and left kidney, were all adherent to the ulcer, on the surface of which there was found a large vein, probably the splenic, with a slit-like opening in its walls about one centimetre in length. The stomach was filled with clots; the veins of the liver and spleen were filled with air. Air was also found in the veins of the stomach, in the jugular veins, pericardium, heart cavities, sub-serous cardiac tissue, and pulmonary blood vessels. There was also sub-pleural and sub-intestino-peritoneal emphysema.—*Deutsches Arch. für klin. Med.*, August, 1882; and *Med. News*, Nov. 1882.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F.M.S.

VITAL STATISTICS

*Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday,
December 2, 1882.*

Towns	Population in 1881	Births Registered	DEATHS REGISTERED			DEATHS FROM SEVEN ZYMOTIC DISEASES							Deaths from Phthisis	DEATH-RATE per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		From all causes	From seven Zymotics
Dublin, -	348,293	716	725	147	226	-	-	2	6	13	23	10	85	27·1	2·0
Belfast, -	207,671	459	479	83	67	2	17	44	-	7	13	10	60	30·0	5·9
Cork, -	78,361	156	150	20	46	-	-	-	-	-	4	4	16	22·4	1·3
Limerick, -	38,600	88	84	18	29	-	-	1	-	-	1	2	11	28·3	1·3
Derry, -	28,947	52	63	3	24	1	-	2	-	-	2	1	4	28·3	2·7
Waterford,	22,401	49	42	9	11	-	-	-	-	-	3	3	10	24·4	3·5
Newry, -	14,782	28	30	5	6	-	1	3	-	1	-	1	2	26·4	5·3
Galway, -	14,621	22	23	2	10	-	-	-	-	1	1	1	3	20·5	2·7

Remarks.

The winter-rise in the death-rate was well marked in most of the towns. Belfast, Limerick, Derry, and Dublin, all showed a rather high mortality. The death-rate per 1,000 of the population annually was 22·7 in twenty-eight large English towns (including London, in which it was 21·3); 27·1 in the sixteen principal town districts of Ireland; 20·2 in Edinburgh, and 27·1 in Glasgow. Omitting the deaths of patients admitted into public institutions from localities outside the registration district, the mortality of the Dublin metropolitan district falls from 27·1 per 1,000 per annum to 26·3; that of the city within the municipal boundary becomes 28·8.

The death-rate from the seven principal zymotic diseases ranged from 5·9 per 1,000 in Belfast and 5·3 in Newry, to 1·3 in Cork and Limerick. In Dublin it was 2·0 per 1,000, compared with 1·8 in the previous four weeks.

In the Metropolitan Registration District 725 deaths were registered against 599 in the four weeks ending November. The increased mortality fell on both extremes of life—but on old age to a much greater extent

than on infancy. The deaths of those aged 60 and upwards rose from 149 to 226, whereas those of children under twelve months rose only from 129 to 147. This result was brought about by a happy immunity from the epidemic diseases of children and by a great increase in the fatality from bronchitis. In Dublin the various zymotics caused 67 deaths, compared with an average of 137·8 in the corresponding period of the preceding ten years. The mortality from this class of affections was, therefore, less than half the average. In the statistics, however, there is an unfavourable feature—namely, the occurrence of six fatal cases of diphtheria. Fever also shows an increased fatality. Of the 23 deaths referred to “Fever,” 8 were ascribed to typhus, 11 to typhoid, and 4 to “simple continued fever” or fever of ill-defined type. The deaths from whooping-cough rose from 9 to 13.

Zymotic affections continued rife and very fatal in Belfast, where serious epidemics of scarlet fever and measles still prevail. No less than 44 deaths were referred to the latter disease, and there were two deaths from smallpox. A fatal case of this disease was also recorded in Londonderry. Diarrhœal affections caused 32 deaths in the eight chief towns of Ireland against 50, 98, and 127 deaths respectively in the three preceding periods.

With the approach of winter an increase in the fatal cases of phthisis pulmonalis is noticed—thus, in Dublin, the deaths rose from 63 to 85, in Belfast from 48 to 60, in Cork from 14 to 16, in Limerick from 6 to 11, in Derry from 2 to 4, and in Waterford from 7 to 10.

In Dublin the deaths from respiratory maladies rose from 121 in the previous four weeks to 184, the average in the corresponding period of the preceding ten years being 160·8. Of the 134 deaths, 130 were ascribed to bronchitis (average=109·3), and 24 to pneumonia (average=24·9).

On Saturday, December 2, the following cases of the principal epidemic diseases were under treatment in the Dublin hospitals, namely—smallpox, 0; measles, 0; scarlet fever, 16; typhus, 59; typhoid, 26; pneumonia, 5.

The mean temperature of the four weeks was 42·0° in Dublin, 41·4° at Greenwich, and 38·5° in Edinburgh.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of November, 1882.

Mean Height of Barometer,	-	-	-	29·664 inches.
Maximal Height of Barometer (on 30th at 9 a.m.),	-	-	-	30·255 „
Minimal Height of Barometer (on 8th at 7 p.m.),	-	-	-	28·942 „
Mean Dry-bulb Temperature,	-	-	-	43·1°.
Mean Wet-bulb Temperature,	-	-	-	41·1°.
Mean Dew-point Temperature,	-	-	-	38·7°.

Mean Elastic Force (Tension) of Aqueous Vapour, -	·235 inch.
Mean Humidity, - - - - -	85·0 per cent.
Highest Temperature in Shade (on 5th), - -	58·5°.
Lowest Temperature in Shade (on 12th), - -	29·9°.
Lowest Temperature on Grass (Radiation) (on 12th),	27·5°.
Mean Amount of Cloud, - - - - -	59·4 per cent.
Rainfall (on 24 days), - - - - -	3·344 inches.
Greatest Daily Rainfall (on 3rd), - - - -	·408 inch.
General Directions of Wind, - - - - -	W. and N.W.

Remarks.

A cold, wet, and windy month, especially characterised by frequent displays of aurora borealis. The mean temperature was about 1° below the average of the previous seventeen years, and 6·7° below the mean temperature of the wonderfully mild November of 1881, but 5·4° above that of the equally cold November of 1878. Both the rainfall (3·344 inches) and the rainy days (24) were considerably in excess of the average of the 17 years ending with 1881—viz., 2·259 inches, and 16·4 rainy days. The mean height of the barometer was only 29·664 inches, so that the winter rarefaction of the atmosphere over the North Atlantic was well marked. From the 1st to the 12th inclusive, the weather was chiefly rough and unsettled, owing to the passage of numerous cyclonic systems to N.E. or E. across the United Kingdom. On the 4th the barometer was down to 28·70 inches in the Hebrides near the centre of one of these depressions. At 3 p.m. of the 7th in Dublin the wind veered from S. to W. with violent squalls, hail, rain, and sleet, the thermometer falling from 50·7° to 39·1°. Thunderstorms occurred in the W. of Ireland, the N.W. and N.E. of England, and over Scotland, on this and the following day. On the 8th a depression, in which the barometer again fell below 29 inches, produced violent gales in Ireland. At 5 a.m. of the 10th the comet was well seen to S. by E. After the 12th atmospheric depressions crossed the Bay of Biscay and France in a direction from W.S.W. to E.N.E. They caused easterly gales in England, and moderate breezes from E. in Ireland. The weather was at this time wintry, changeable, and showery, and in Central Ireland particularly sharp frosts were felt by night—the thermometer falling to 25° at Parsonstown on the 12th and two following nights. On Friday, the 17th, the weather was fair, but a memorable magnetic storm prevailed both in North America and in Europe. Strong earth-currents were reported, and in the evening a magnificent aurora borealis, with carmine and white rays, was seen in both Continents and throughout the British Islands.

Very unsettled, wet, and often stormy weather followed this magnetic disturbance, which lasted for several days in a less intense form, aurora being seen on many successive nights from the N. of Scotland. Temper-

ature, however, was much higher in the interval from the afternoon of the 21st to the morning of the 24th, when it again gave way. At this time the moonlight was unusually brilliant by night. Solar halos at 11 a.m. and 1 30 p.m. of the 28th ushered in a system of wind and rain which was succeeded by one or two tolerably fine, cold days. In Dublin lightning was seen on the evening of the 2nd. Auroræ were observed on the 17th and 25th. Sleet fell on the 15th and 19th, and hail on the 7th, 8th, 10th, 13th, 14th, and 24th. The atmosphere was foggy on the 6th, 11th, 12th, 14th, 17th, and 30th. Solar halos were visible on the 28th. It is to be noted that this month was much colder in the N. of Europe than November, 1881, was. At 8 a.m. of the 12th the thermometer ranged from -8° on the Gulf of Bothnia to 61° in the North of Spain.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

TREATMENT OF ANASARCA.

It is known that unpleasant results, or rather accompaniments, occasionally occur in the drainage treatment of anasarca, even by Dr. Southey's improved method. Dr. Adam, of Melbourne (*The Australian Med. Gaz.*, Aug.), thinks that there are leading factors causing the irritation of the skin in cases of anasarca, which result frequently either in simple erythema, erysipelas, or abscess. In the first place, in an œdematous limb the skin elements become compressed and their vitality is lowered by interference with their nutrition. This is well illustrated when an ulcer forms, cicatrisation will not take place until the œdema be reduced—in other words, until nutrition is restored to the skin elements, when the sore usually heals kindly, only to break out again as the dropsy re-accumulates. The second factor appears to be the presence of an irritating body—the dropsical fluid—which possesses a weak alkaline reaction. Now it seems probable that any fluid possessing a positive reaction (either acid or alkaline) flowing over a skin that is badly nourished, and whose epithelium is put on the stretch, will be quite a sufficient irritation to cause untoward complications. Taking this view of the case Dr. Adam, after some previous trials, finally has adopted the following method, which he thus describes:—"Moderately sized Turkey sponges were thoroughly soaked in saturated solution of boracic acid, squeezed dry, and applied over the punctures, and kept in position by a turn of bandage lightly applied. These sponges require to be removed in the course of two or three hours, and the accumulated serum squeezed out and again soaked and re-applied. In this manner a couple of pints or

even more of serum could be drained in the course of twenty-four hours." In all the cases Dr. Adam tried this plan there was not the slightest trace of irritation of the skin. Of course there is no method but which will have its disadvantages, and this is no exception to the rule. The attention required, although great, is not insurmountable. For any case in which this method would be admissible would want considerable nursing, and no extra labour would be involved by it. Perhaps the greatest disadvantage is that the punctures require to be repeated nearly every twenty-four hours. But this is not so painful as may be supposed, for the skin, by tension and loss of vitality, is rendered less sensitive. Another disadvantage is that in some exceptional cases only a drop or two of fluid follows the puncturing. The cause of this probably is that the serum contains too much albumen, or it may be, as Professor Spencer calls it, solid œdema. Dr. Adams' most successful cases as regards draining were those in which the dropsy was due to cardiac insufficiency. Œdema due to Bright's disease as a rule did not drain so easily.

SYPHILIS OF THE HEART.

ONLY nineteen cases of this rare affection have been hitherto described. To these B. Teissier (*Annales de Derm. et de Syph.*, 2me ser. t. iii. No. 6) adds another, essentially as follows:—A prostitute, twenty-seven years of age, in the third year of syphilis, which, however, had only manifested itself in the form of buccal mucous patches, was suddenly seized with dyspnœa, followed by asphyxia and death within twenty-four hours. The autopsy showed extensive involvement of the anterior walls of the right ventricle in its upper half, the muscular tissue of which seemed to have become entirely transformed. The thickness of the cardiac wall appeared about normal, but it seemed of a peculiar light grey colour, and its consistence much firmer. Section showed numerous milk-white lentil-sized nodules, both in the cardiac walls and elsewhere. These presented a caseous appearance, but were in reality of quite firm consistence, showing no trace of softening even in the centre. In addition to the interstitial myocarditis and the gummatous deposits, there were considerable vascular alterations in the form of peri-arteritis, endo-arteritis, &c.—*Archives of Dermatology*, July, 1882..

SPURIOUS PURULENT OPHTHALMIA PRODUCED BY MEANS OF JEQUIRITY.

DR. DE WECKER, of Paris, in the *Annales d'Oculistique* for July—Aug., 1882, advocates the use of an infusion of "Jequirity" to induce purulent conjunctivitis as a means of treating severe granular ophthalmia. Jequirity (*Abrus Precatorius*) belongs to the family leguminosæ, and is a native of tropical Asia and Africa, whence it was imported into South America. It is the seeds of the plant which contain the medicinal properties. Dr. De Wecker has found that it produces an acute con-

conjunctivitis as effectual for removing granulations and pannus as inoculation, without its attendant danger. The attack produced by jequirity usually lasts only about fifteen days altogether. It is also, by its use, possible to proportion the dose to the requirements of the case, whereas in inoculation this is impossible. The directions for use are as follow:—
 “Triturate carefully and finely 32 grains of the jequirity, and macerate the product in 500 grammes of cold water for twenty-four hours. Then add, the following day, 500 grammes of hot water. Filter the liquid immediately on cooling.” The fluid so obtained is to be applied to the everted conjunctiva of the lids on pads saturated with it, which are to be kept in position for a few minutes, shorter or longer in proportion to the result required. A few hours after this great irritation and œdema of the conjunctiva are experienced, followed by a copious secretion, there is some fever, sleeplessness, and headache for three days. After the third day suppuration commences, and lasts for five days, after which the pus diminishes in quantity, and about the fifteenth day the patient is convalescent.

A NEW METHOD OF TREATING THE LACHRYMAL PASSAGES BY MEANS OF A DILATOR.

DR. GALEZOWSKI has for the last six or seven months been using forcible rapid dilatation of the nasal duct, without incision, for the cure of stricture. He has found that by the use of his dilator he can effect the cure of even long-standing strictures in a month or six weeks; and quotes cases in which after Stilling's method, followed by the use of Cooper's probes, had failed, his dilator was successful. His method is as follows:—Having divided the canaliculus, as in Stilling's operation, he introduces his dilator, and passes it, closed, down through the nasal duct. He then withdraws it slowly, pressing with his finger as he does so a lever which forces asunder the jaws of the dilator. The closed instrument is about the size of one of Bowman's No. 4 probes. When the jaws are separated it represents a probe of the size of Cooper's largest. This dilatation is made without the loss of a single drop of blood, and without, relatively, very much pain. The operation is usually followed by no inflammatory reaction, unless in cases where suppuration already exists, in which case he applies poultices, &c., for a day or so after. On the third or fourth day he is in the habit of introducing a small sound to assure himself that the nasal duct is quite free, and if so he either then, or the next day, introduces a large sound (No. 10 or 12 of his collection). This passes, usually, without the least difficulty and with little pain. He does not again pass a probe for five or six days. This is again repeated in another five or six days, and so on for three or four times, when the stricture is cured.—*Recueil d'Ophtalmologie*, Aug., 1882.

A. H. B.



DR. E. H. BENNETT'S Case of Restoration of the Nose.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

FEBRUARY 1, 1883.

PART I.

ORIGINAL COMMUNICATIONS.

ART. II.—*The Physiology of Plastic Surgery.*^a By EDWARD H. BENNETT, M.D.; Professor of Surgery in the University of Dublin; President of the University Biological Association.

THE title of this communication would allow me to discuss a very wide range of subjects. I purpose, however, to confine myself to the study of a very few points of interest alike to the practical surgeon and the physiologist, taking as an illustration the special operation known as the Indian operation for the restoration of a lost nose.

The accidental presence in Sir P. Dun's Hospital at this time of a patient on whom I performed this operation four years ago enables me to demonstrate the special points I desire to refer to with advantage.^b The length of time that has elapsed since the operation is sufficient to ensure that all changes of nutrition, of cicatricial contraction, and of innervation are completed and permanent. In this patient the entire of the cartilages of the nose with their coverings had been lost by lupus. His present condition is sufficient, I think, to remove a certain opprobrium which attaches to this operation in consequence of the imperfect results too frequently observed to follow its performance. The charge that

^a An Address delivered at the opening of the present Session of the University Biological Association.

^b The patient was shown to the Association, and his photograph exhibits his condition accurately.

it results only in replacing the lost organ by "a tumour planted in the middle of the face" is at least in this instance not sustainable.^a

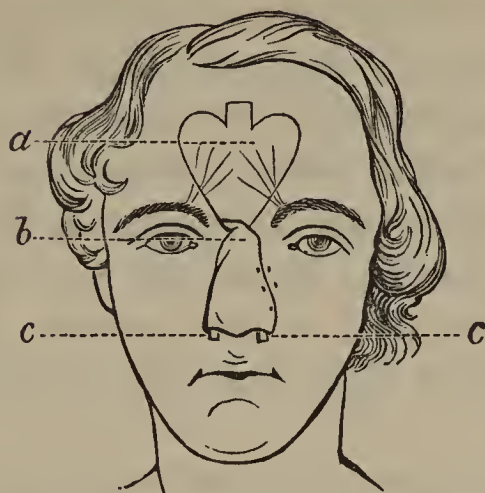
On the other hand, I do not assume that such good results are always or invariably to be obtained, for the circumstances of each case are different, and in many are most unfavourable, particularly the size of the flap obtainable and the extent of cicatrix upon the cheeks, &c., but these are the points which must guide the surgeon in the selection of cases for operation.

While impressed in favour of the operation in suitable cases, I dare not, however, expect to attain to the success of Sédillot or of Skey, who both assert that in their hands deformity was so completely removed that even the companions of the individuals never suspected that they had been the subject of operation. It is sufficient to know that with care and judicious selection excellent results can be obtained. We must not suppose that this operation presents only difficulties in the way of selection and execution. Death of the patient has, we are told, occurred in two out of eight cases treated by Dieffenbach, and Sédillot states that he saw four patients die of the operation in Paris. Death of the flap has happened also, and no one can undertake the operation without this contingency suggesting itself to his mind.

I have not, I am happy to say, seen either of these results in my own practice or in the hands of other Irish surgeons; but that they have occurred even with masters in the art of plastic surgery is enough to prove that the operation may not be lightly undertaken or regarded as a mere surgical toy. But my present object is not the study of the risks to life or flap, nor any of the details of the operation except the more strictly physiological changes occurring in cases in which both the patient and the transplanted flap live. I deal only with the structural alterations in the flap and the changes observable in its sensibility. The entire success of the operation æsthetically depends on the correct appreciation of the former, while to the latter belong facts of the highest physiological interest, which, as far as I know, have been hitherto left almost unexamined.

For exactness sake I will briefly sketch the essential features of the operation.

^a Il faut avant tout le reconnaître, le nez fabriqué avec un lambeau ne présente jamais une forme bien naturelle; il ressemble plus ou moins à une tumeur implantée au centre de la face. Manuel de Médecine Opératoire. Par Malgaigne. 8th Edition. Par Le Fort. 1877.



A flap, shaped as in the diagram (*a*), is cut out on the forehead by incisions extending in depth to the areolar tissue immediately covering the pericranium, of a size, determined by previous measurement, sufficient to supply not only a covering for the parts exposed by the loss of the nose, but, as far as the operator can estimate, enough to represent the shape and projection of the lost member. This flap dissected to the narrow neck, resembling the stalk of a leaf attached in the interval between the brows, is twisted round and placed on a surface already pared and defined by clean cut margins, and there united by sutures in order that union by first intention may be induced. To imitate the shape of the nose some supports (*c c*), either pledgets of lint or metallic supports, or some such structure, are placed beneath the unsupported central parts of the flap and in the position of the intended nostrils to raise the former into a suitable tip of the nose, to maintain the latter pervious. For this support I prefer a little shield of thin silver fashioned to imitate the form of the lost cartilages, and cut to fit the margins of the openings of the nostrils in such manner as to avoid any danger of its edges slipping beneath the margins of the flap, and so preventing their union with the incisions on the face.

These are the essential points of Carpue's operation as practised by him in 1816, only that he made no effort to support the central part of the flap. He describes and figures its appearance lying flaccid after the completion of the operation, and his disappointment at this state of affairs; but he says—"Nature worked with me and raised the nose by her own means." None of us are content in the present day to trust this matter to nature alone, and each according to his taste supplies some artificial support. More depends, I am certain, on the changes which take place in the deep surface of the flap as it cicatrises than on any form of support introduced beneath it. To meet this cicatrization of

the internal surface of the flap, while supports judiciously used may regulate it, the one thing essential is to provide a flap of ample width and length, enough not only to make allowance for the contraction of the flap when it is cut out (all writers speak of this allowance), but enough to provide a nose in all dimensions much too large for the face when first adjusted. In this lies the first and greatest obstacle to the success of the operation, for unless the forehead be high and wide a proper flap may be an impossibility.

The attempts to induce the growth of bone in the flap by transplanting with it the periosteum of the forehead into the position of the desired bridge of the nose, or the actual displacement of bone from the nasal processes of the superior maxillæ, or again the sacrifice of a digital phalanx for the same purpose, are modifications of the operation which I am not at present concerned with. They are all of much interest as laudable efforts to supply the want expressed by the passage I have quoted from Carpue, and by the various contrivances invented to support and model the new nose, but they all increase the gravity of the operation, and as yet have been productive of but little positive success. I am satisfied that if the conditions as to the size of the flap can be fulfilled they are unnecessary.

A curious theory bearing on this part of my subject has been published by the late Mr. Hamilton, whose skill in this branch of surgery was so well known in this city. He attributes to the vessels of the part the strange function of a nose-making power—"offering in this respect another confirmation of the curious physiological fact of the nose-supporting vessels having deposited in the new nose a material approaching that of the natural organ, and thus turned a soft loose flap as it came from the skin of the forehead into a fleshy, firm structure, not far removed from the consistence of the real nose." We have here a theory evidently constructed on the physiological lines of the Bridgewater Treatises, but good as it seemed to the author, a more rational and more practical explanation arose in his mind after its enunciation, for in the next sentence he says—"Another reason may be the contraction and necessary consolidation of the part." To obtain a flap of the size sufficient to allow of this contraction and consolidation of the part is not only difficult in many cases, but when possible it requires so wide an isolation of tissue from its vascular supply that in one's earlier operations the prominent fear is for the life of the

flap. I have already said that I have never seen this fail. Directly related to this question of modelling of the new nose is the practice I have adopted in dealing with the formation of the nostrils. The notches seen in the upper margin of the flap as it is traced on the forehead are intended to form the margins of these openings in the new nose, while the columella is to be formed of the intervening lobe.

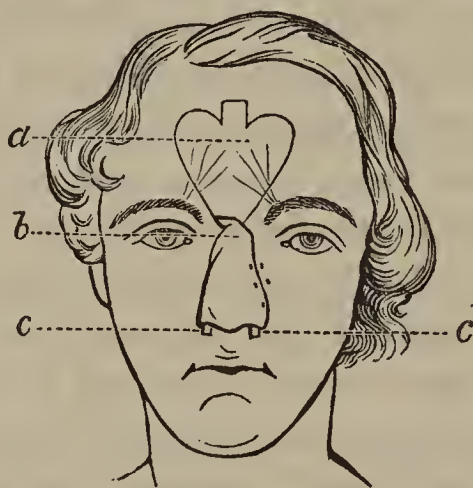
It has happened in my cases that, even with the fullest sized flap I could get, I found it impossible, without an undue depression of that part of it intended for the tip, to unite the columella in place; or rather, I should say, my early attempts at uniting it failing, I have in the example I exhibit, and in one which preceded it immediately, given up the attempt at the primary operation, leaving it for a later time, and at last abandoning it entirely.

The results in these cases have taught me that this is a better practice than to attempt to form a perfect columella. Further, my experience of two of Mr. Hamilton's cases confirms me in this view. He used (I assisted him in many of his operations) to complete the union by suture according to the usual rule, and succeeded, but always with the immediate result of depressing the tip of the new nose too much. Since his death I have seen and had to treat two of his patients in whom the nostrils were completely occluded, the contraction of the openings left at each side of the columella going on quietly and slowly until complete occlusion or only a pinhole opening existed in the place of each nostril. These could be reopened by puncture, but the moment one gave up the introduction of tubes or some such dilators the nostrils reclosed.

I cannot quote many cases, but these two I have seen as the ultimate result of the proceeding of Carpue carried out completely. In the case before us and its predecessor which I have seen within the last year, in which I failed or omitted to make anything in the way of a columella beyond the middle lobe of the flap, I find that the contraction of the deep surface of the flap is such that only just enough orifice is left to admit air to the nasal fossæ, while the overhanging of the middle lobe of the flap quite hides the want of a columella, the notching still leading one to believe that there are two nostrils—indeed only a close search will prove the contrary. It will be seen, then, that the physiological action may in this case exceed the nose-forming function of Hamilton, and entirely close the organ if its powers be too much

called on in our effort to make a complete nose with its two nostrils; that a more moderate demand, satisfied with a single opening for ingress and egress of air, will furnish a fairly presentable and more workable organ.

I pass now to the phenomena I have observed relating to the sensibility of the flap transplanted in this operation—phenomena which, though perhaps of little practical importance in regard to the operation itself, are most interesting physiologically. I have been particularly surprised that, with a very few observations which I shall presently quote, these phenomena have been hitherto allowed to go unobserved, or at least unrecorded.



I must briefly revert to the diagram representing the plan of the operation. A moment's reflection will suffice to satisfy any one familiar with the nerve supply of the forehead (which I have roughly traced on the diagram) that in the forming of a flap such as we are discussing all the nerves must be divided by the incisions except some few filaments supplying the narrow neck only of the flap. Hitherto I have not spoken of the completion of the operation, which is made at a period about the commencement of the third week, or at some time a little later after the life and union of the flap seated in its new place is secured—namely, the division of the twisted bridge (*b*) of skin and a smooth inseting of its parts into the surrounding structures. Whatever nerve filaments escaped the primary operation are cut across in this operation. Here, then, is a transplanted piece of skin of large dimensions under conditions which ensure that either at its first detachment from the forehead or, should any filaments escape at this time, in the subsequent division of its neck all its nerve fibres have been cut across.

What are the events which follow the section of nerve trunks elsewhere in the body? Very commonly the functions of the nerves, so far as their parts beyond the section is concerned, is for ever

lost; they transmit no sensation to the brain, nor provoke the action of any muscle in their district; or, again, a union in favourable and rare instances occurs, and after a long interval—fourteen months at least, mostly a longer period—an imperfect and perhaps slowly-improving power of transmission of external impressions to the centre and of the orders of the will outwards to the muscles is observed; or lastly and most rarely (indeed, there are perhaps but four cases of its occurrence in man recorded on reliable evidence), a rapid union and restoration of function occurs, resulting in a restoration more or less complete in a time varying from ten days to a fortnight after the section. The slower and more frequently observed restoration is preceded by the Wallerian degeneration of the nerves on the distal side of the section, and repair becomes possible only after it has completed its action and the nerves have been regenerated.

In the literature of this plastic operation I have searched in vain for complete accounts of the behaviour of the sensation in the transplanted flap. Indeed, I can find only a few very incomplete statements with reference to it in the entire range. I think this absence of observations is due to the fact that the minds of operators have been chiefly occupied with fears for the life of the flap, with the details of its union with the face, and in maintaining its form.

The earliest observation made with regard to the sensation of the flap is that made by Delpech just when the operation was in its infancy in Europe (1820). It refers, too, only to a single part—the feeling present in the neck of the flap on the fifteenth day after its transplantation. He says—“At the instant of its complete separation (*i.e.*, of the bridge) the flap became pale in a marked manner; nevertheless it did not lose either its heat or its natural sensibility, and the patient gave signs of this last every time the needles were plunged into it, for the stitches which involved it.” It is clear from this passage that the sensibility of the bridge was due to the transmission of impressions by some route other than through the nerve fibres which may have escaped division in the cutting out of the flap in the first operation, for, if any such were present, the section of the bridge must have involved them, yet the part was sensitive to the needle punctures.

The next exact statement I can find is that of Mr. Erichsen, who says—“The dressings must not be disturbed for three days; by this time, if all go well, the flap will be found somewhat tumid,

warm, and sensitive, but pale in colour." I have never seen the flap sensitive at so early a date, nor indeed can I conceive its being so except in a very limited district near the twisted pedicle, for, as I have already noticed, the lines of the incisions must divide the greater number of the twigs of the sensitive nerves which enter into its structure.

Mr. Erichsen describes the effects of the section of the bridge as being quite different from those recorded by Delpech as follows:—"The sensibility of the new nose is entirely destroyed for a time after the division of the bridge, but it slowly returns from all sides, appearing first in the neighbourhood of the adhesions between it and the cheeks, then near the columna, next in the bridge, and thus the organ at last has its sensation restored; for this, however, several months will usually be required, and the part in which it returns last of all is its central portion."

I have myself verified the truth of Delpech's account of the results of the section of the bridge, and certainly my observations do not agree with those of Mr. Erichsen either as to the existence of sensibility in the flap on the third day, or as to the change in its condition following on the division of the bridge.

I must now state the facts I have myself observed. I only regret that they are not more numerous, for I feel some diffidence in expressing opinions quite opposite to those of so high an authority as Mr. Erichsen, based on so limited a number of cases as I have accurately investigated.

My early experience of the operation was acquired in assisting as a student, and subsequently the late Mr. Hamilton. I have several times operated myself, I confess, without noting the conditions of sensation. My attention was arrested by the early return of sensation in a case treated some six years ago, and I have since made fairly complete observations in two cases, one of which is before us now four years after operation; the second I saw not long since after an interval of at least five years from the time of operation. Unfortunately of all my cases these are the only instances I have been able to follow up for a sufficient time to enable me to speak positively of the ultimate results. I should note that partial operations on one side of the nose, and operations for restoration of the eyelids, although they follow the same rule, as far as I can determine, are yet too uncertain from the form of the flaps and their relation to nerve-supply to justify my mixing their consideration with cases of the complete operation of Carpué.

I find that after the flap has been raised and secured in its place and duly supported, it is devoid of sensation for over a week ; as far as one dare test it long after its heat is restored and its colour is assurance of its life, it is not sensitive. Up to the tenth day at least this condition exists, but after the tenth and before the fourteenth day sensation returns suddenly and imperfectly, and so it remains ever afterwards, uninfluenced by the section of the bridge or by the progress of time in any material degree. In the case before us as an illustration the sensation is good, but greatly below that of the other parts of the face, requiring a more firm contact to enable the patient when blindfolded to place his finger on the spot touched than would be necessary on any other part of the face. His condition is now (four years after operation), as nearly as I can determine with regard to sensation, the same as it was fourteen days after operation. The facts of the other case are precisely similar both as to existence and defect of sensation. The mode of return is like that of the most rapid form of restoration of nerve function observed in the primary union of nerve trunks I have referred to ; but no one will for a moment suggest that the surgeon can here effect any exact adaptation of nerve fibres in the adjustment of the lines of incision for primary union around his flap.

Only one other passage I may quote as bearing on this subject. Billroth says—"When you have excised portions of skin, and brought together and united parts lying at a distance, new nerves grow through the cicatrix, and perfect power of conduction comes after a time, as may be often observed in plastic operations. These facts are remarkable, and physiologically are still entirely inexplicable." My object in submitting these observations—which, I admit, are too few in number to justify us in asserting that they establish the rule for all cases—is to offer by them some help, no matter how little, towards the removal of the condemnation of our powers of clinical and physiological investigation contained in the words of Billroth, "still entirely inexplicable."

ART. III.—*The Medico-Legal Aspect of the Peltzer Case.*^a By F. J. B. QUINLAN, M.D., Dubl., M.R.I.A.; Fellow and Additional Examiner in Pathology and Forensic Medicine, King and Queen's College of Physicians.

THE trial of the brothers Armand and Léon Peltzer for the murder of M. Bernays occupied the attention of the Central Criminal Court of Brussels during nearly the whole of last December, and culminated in a verdict of guilty against both accused towards the end of that month. The sensationalism of Braddon and the unsavouriness of Zola were alike surpassed by the romantic details of a crime, proving once more that fact is stranger than fiction; and it would not be too much to say that in every part of the civilised world its details, presented daily by the telegraph, were followed with eager attention. It is, however, equally certain that, while great prominence was given to the dramatic incidents of the story, the evidence of the medical and chemical experts, both for the prosecution and for the defence, was very insufficiently noticed in the reports published in these countries. The *Indépendance Belge* gave them almost *verbatim*; and, as this expert evidence on both sides was distinguished by great ability, it is proposed to briefly review it. It is not necessary, nor would it be suitable, to here repeat the sorrowful story; a few main outlines, however, are needful to throw light upon the expert evidence.

M. Bernays was a barrister practising in Antwerp, which is now rapidly becoming the great seaport of central Europe. He was a specialist, devoting himself to commercial law; at the time of his death was earning a very large professional income; and he had for many years been married to a daughter of M. Edouard Pecher, one of the great Liberal leaders of the city. For such a man it might be naturally expected that the world would offer its sunniest aspect, but it was not to be. M. Bernays was absorbed in his profession; Madame Bernays complained that she was neglected; and there appeared on the scene the subtle intermediary, M. Armand Peltzer, an engineer, a man of accomplishments and education, speaking four languages, who commenced as the friend of the husband, and ended by becoming the confidant and adviser of the wife. Dissatisfied with what he heard from servants, M. Bernays forbade M. A. Peltzer to enter his house, resisted all efforts at

^a Abstract of the evidence recently given in the Peltzer trial by the medico-legal and chemical experts.

reconciliation, and returned his letters unopened. A kind of truce, termed a *modus vivendi*, was arranged between the husband and wife, who lived beneath the same roof, but never saw each other. Finding reconciliation hopeless, M. Armand Peltzer determined to sweep from his path (*supprimer*) M. Bernays, which he shortly afterwards did.

M. Armand Peltzer had a *mauvais sujet* brother, Léon Peltzer, like himself a man of education and accomplishments, who had failed in Belgium, England, and South America, and who was now eking out an existence in the United States under a false name. Bankruptcy and crime had stained his career; he could not return to Belgium in his own person, and therefore he seemed to Armand Peltzer the man for his designs. Communicated with, Léon Peltzer left America, saying that he was going to Canada, travelled under false names constantly changed, and met his brother Armand at Paris, where the latter was viewing the late exhibition of electric apparatus. When Léon entered a hotel, he usually wore his right arm in a sling, and thus evaded the police regulation of writing his name with his own hand in the hotel book—vainly hoping, with the aid of false names, to escape the ever-open eye of the French and Belgian police. The brothers arranged their nefarious plan, and separated; and Léon procured a wig and a means of staining his face brown, so effectual as to deceive even the *perruquier*. Thus fortified, he proceeded to Brussels, and took a house just beside the terminus of the railway from Antwerp—a minute precaution, the deadly object of which will presently become evident. He got blinds placed on all the front windows to give the house the air of being inhabited, but furnished only the entrance hall, a little office beyond it, and a bedroom, nominally for his servant, but really for himself. The first flight of the stairs was carpeted, to give anyone entering the idea that the house was wholly furnished, instead of being, in the emphatic words of the indictment, “a trap to ensnare the unhappy Bernays.” To illustrate the expert evidence, it is now necessary to say a few words about the hall of this house of death, and the little office (*cabinet*) beyond it.

On entering the hall the visitor perceived on the left the stairs leading to the upper part of the house, and on the right the entrance to the little office beyond. The hall was simply furnished with a hat and coat rack. The office was entered by a doorway, which, in addition to a door, was closed by a thick hanging

curtain called a *portière*. This curtain, which in the Belgian winter is a necessity, was nailed to the top lintel of the doorway, and hitched against the left doorpost, thus hanging diagonally across the doorway. It will be thus evident that anyone entering this doorway would have to stoop his head to avoid touching the *portière*, and every Belgian does this instinctively, for a *portière* is often dusty. Even this detail was a part of the infernal plot.

Arms were not forgotten, and there was quite a museum of pistols, but they were all too loud, and would be heard in the street. At last in London Léon found a pistol to his mind. It made but little noise; and, as the cartridges were more of a fulminate than of powder, it did not burn or blacken even near objects. In the shooting gallery of the respectable London tradesman, whose subsequent righteous indignation may well be imagined, Léon satisfied himself as to these details, and still further as to the great power of the projectile in penetrating a thick plank.

All being now settled, Léon undertook a journey to Hamburg and Bremen, under the name of "Henry Vaughan," and consulted commercial lawyers in both these cities about the establishment of a line of ocean steamers. The wary Teutons were civil, but were not for a moment deceived into imagining that "Henry Vaughan" meant serious business. From these cities he communicated with Bernays, enclosing a fee of £20, and requesting an interview at his own house in Brussels, in order to consult him about the line of ocean steamers. At last by telegraph he fixed an interview for Saturday, the 7th of January of last year, at half-past ten o'clock, politely informing Bernays that the house was just beside the railway station. This latter hint was to prevent the frugal Bernays from taking a cab, which might have proved inconvenient. The cabman, if kept waiting, might have heard the report even of the silent Oxford-street pistol, and noticing that his fare did not come out, might have informed the Brussels police, who would break in with but scant ceremony on learning these two facts.

Blithely poor Bernays took a *return* ticket from Antwerp to Brussels, stepped the few yards to the house of doom in the Rue de la Loi, 159, and knocked at the door. It was opened by Léon Peltzer, so disguised that Bernays did not know him, imagined him to be "Henry Vaughan," and addressed him in English. The pretended Vaughan disembarrassed his victim of his overcoat and hat, which he hung on the rack, and motioned him to enter the

little office. Bernays complied, and, in entering, instinctively stooped his head, exposing the back of his neck, and received the ball from the pistol of Léon Peltzer, who followed close after him. This was shown by a dash of arterial blood which squirted from the wound, and sprayed over the open door to the right. The conical bullet pierced the occipital bone behind the foramen magnum, passed to the right and slightly upwards, penetrating the medulla oblongata and the pons, and finally lodged in the right anterior lobe of the brain. Bernays fell stone dead, owing to the destruction of the respiratory centre—in fact, as used to be said in Galway duelling days, he “never heard the shot.”

In the centre of this office was a large desk, and beyond it, and opposite the door, an arm-chair. The remaining furniture of the room, which was carpeted, consisted of a few chairs and a gas stove, which was lighting at the time of the murder, and continued alight till the 18th of January, when the body was found by the police.

As M. Bernays fell forward he struck his right temple against the corner of the large desk, and was cut severely. He then rolled on the floor, as it appears to me, on his side, with his face on the floor and his left forearm extended, with its palmar surface next the ground. An oozing of blood from the nose, the result of the blow, now occurred, and the body thus remained for upwards of seventy hours. All these details are proved by the wonderful ability with which the *médecins légistes* for the prosecution put together the facts which they observed, and the medico-legal conclusions deduced therefrom—conclusions which the experts for the defence failed to shake. Satisfied that his victim was dead, Léon Peltzer walked out of the house, and shut the door behind him. Had he left the matter there, this act would probably have added another to the list of criminal mysteries which the great Judge alone will unravel. As it happened, none of his household knew where Bernays was going; and months would have elapsed before the suspicions of the neighbourhood would have caused the house of death to be broken open, and Léon might have been back in America. He was, however, too ingenious, and about ten days after wrote a letter to the coroner, under the name of Vaughan, saying where Bernays was, and that he had shot him by accident. The Belgian police said little, and put nothing in the papers, but photographed the letter, and distributed it far and wide among their body. The handwriting was recognised, and soon after led, by a

most romantic chapter of accidents, to the arrest first of one, and next of the other brother. It will be well now to briefly analyse the able evidence of the experts for the prosecution; and to throw light upon their testimony it will be necessary to mention that on the morning of the 18th of January, when the chamber of murder was broken into, the corpse of M. Bernays was found reclining in the arm-chair at the end of the cabinet, and opposite the door. A basin of water, mixed with blood, stood upon the large desk, and the gas stove was still lighting.

Dr. Stienon deposed that he had been commissioned to search out the causes of death, and that he had found two wounds—one on the right temple, a simple bruise, and the other on the back of the neck, which had been the cause of death. The hairs round the bullet-wound in the occipital region were not burnt, nor was there any trace of grains of powder around it. The witness described the path of the projectile already mentioned, and said that, with the exception of a few little fragments of lead deposited in the pons, it was firmly lodged in the front of the right lobe of the brain. He added that an examination of the body had revealed in some places stains of blood, and in others cadaveric lividities. The stains of blood were exclusively upon the head, and were arranged in a very characteristic way—two little stains on the right cheek, and on the right side of the neck two little streaks of blood. The nostrils were full of epistaxial blood, as was also the moustache, but there was no blood in the pharynx. The hairs on the back of the neck and on the right side of the head were frizzled, as if they had been crimped (*esquillés comme crêpés*), from the circumstance that they had been smeared with blood, which had been allowed to coagulate upon them and then gradually dry. When the body was raised up in the arm-chair, about three days afterwards, this dried blood was removed by dry rubbing, which is the only way to account for this characteristic appearance. The bullet-wound, according to Dr. Stienon, scarcely bled outwardly, and there was no blood on the victim's clothes. There were a few spots of blood-stained water on his shoulders and on the arm-chair, but this took place while some one was washing the moustache and nostrils of the victim with the water contained in the basin, after he had been lifted into the arm-chair. The cadaveric lividities were upon the outside of the right leg and the inside of the right forearm. On the carpet covering the floor was a large circular blood-stain, with a species of hollowing (*echancrure*) in the middle of

it, containing 250 grammes (about nine ounces) of dried blood; and about this there were three theories put forward. The prosecution maintained that it was caused by a foot standing on it, to which it was objected that the sole would have made another mark upon the carpet. The defence asserted that it was Léon Peltzer kneeling to lift the body after the "accident," but in that case the knee of Léon's trousers would have been stained, and that trousers was not produced. The third—the popular local belief, to which, after much consideration, I lean—was that the unstained part of the carpet was the spot on which the head of the victim lay, and that the epistaxal blood flowed round it. The witness expressed his belief that the body had lain where it fell until the fourth day, and gave the following reasons:—By experiment he found that cadaveric lividity could not be displaced after the body had rested in the same position for twenty-eight or thirty hours. Now, as the lividities, which would have been produced by the sitting posture, were absent, he concluded that the body had not cooled in the sitting position in which it was found. Again, if Léon Peltzer had lifted the victim at once into the chair (as he said he did), it would have been impossible to prevent the epistaxal blood flowing upon his clothes. If the body had not been disturbed for twenty-four hours, cadaveric rigidity would have supervened; and it was evident, from the muscles not having been torn, that the body had not been lifted for about seventy hours, when rigidity had disappeared. Dr. Stienon, from experiments, stated that when the shot was fired the muzzle of the pistol was at least 10 centimetres (4 inches) distant from the neck. He further expressed his belief that death was instant (*immédiate, foudroyante*). His evidence was distinguished by great ability and clearness, and must command general approval, except with regard to the stain, about which there are too many elements of doubt to allow any certain conclusion. Upon this matter there is but one certainty—viz., that the hollow was produced at the time of the murder and not on the 18th of January. His evidence was confirmed and re-echoed by Dr. Oscar Laroche and Dr. Victor Vléminkz, both medical jurists of Brussels, the latter of whom stated that the large blood-stain lay exactly at the foot of the desk against which Bernays' head struck—a fact which appears crucial as to the accuracy of the view advocated in this paper. M. Bergé, Member of Parliament, Professor of Chemistry to the University of Brussels, gave interesting chemical evidence, in the course of which he stated,

with reference to the chamber of murder:—"The atmosphere was humid; and the gas stove, while giving out heat, gave at the same time a great quantity of watery vapour. Every cubic metre (about 10 cubic feet) of gas gives out (in combustion) a litre (somewhat less than a quart) of water." When we remember that the body of Bernays was lying under such conditions of heat and moisture for eleven days before it was found, we must admit that a great element of uncertainty was introduced between cadaveric lividity and decomposition. The able medical experts for the defence did not fail to press this point home.

Dr. Guillery was called, and, on the requisition of the prisoners' counsel, all the other medical experts retired. This is a striking departure from the practice of our courts. Dr. Guillery gave, up to a certain point, evidence similar to that of Dr. Stienon, except that he would not admit that death was instantaneous. "The instantaneity is never complete," said he; "there is always some movement in the passage from life to death." He further was of opinion that, as the ball injured the right cerebral lobe, there was paralysis of the left side of the body, and that the body rolled over on the right side by *contrecoup*. He was now asked where the blood came from, and replied—"Here I separate myself from the report of my colleagues." He endeavoured to prove that the blood came principally from the back of the neck and a little from the nose. It is hard to see how this hypothesis could benefit the prisoner. Bernays was found leaning back in his chair, into which (according to Léon Peltzer's statement) he had been lifted immediately after death. Now, if Dr. Guillery's view was correct, the blood would have rolled down the back of the neck, which it did not. Dr. Guillery supported his views by numerous experiments made upon dogs—quite a hecatomb of which appears to have fallen at the hands of both sides; and being asked why he selected dogs, replied—"We required arterial blood, and as one cannot cut the artery of a human being with impunity, we had recourse to the animal which socially approaches nearest to man." Later on, being interrogated about one of his experiments, he replied—"I performed it upon a big dog of surly disposition, who did not wish to bleed." Both these pleasantries were received with roars of laughter, but appear singularly out of place in expert evidence, and where two fellow-creatures were on trial for their lives.

Dr. Schœnfield, of St. Gilles, one of the medical jurists of the Crown Prosecutor's office, endeavoured to adapt the circumstances

of the evidence to suit the story of Léon Peltzer. His theory, however, was entirely unsatisfactory. What may be called a public conference of the experts now took place before the jury, and, to use the words of the *Indépendance Belge*, rapidly assumed a most acute form. Each of the experts adhered to his own theory, invoked his own authorities, and endeavoured to turn them to his own advantage. Towards the end of this discussion M. Guillery said, "I am convinced that my opinion is the only exact one;" to which M. Vléminkz replied, amid laughter, "I have the strongest reasons to doubt it." A discussion here arose whether, as M. Stienon thought, the blood was venous from the nose, or, according to the defence, arterial from the back of the neck. Neither side appeared to have used the spectroscope. It of course goes without saying that these eminent gentlemen must be familiar with the instrument—probably the blood was too dried up for the purpose. In an earlier stage of the trial the stain on the carpet had been compared to a stain of bees' wax (*cire brunâtre*).

It is to be regretted that space does not permit a more lengthened review of evidence so able, so carefully given, and to the elaboration of which so much study and experimentation had been devoted. A perusal of the whole trial brings into striking relief the differences of procedure between our Continental neighbours and our own criminal courts. The indictment, instead of bristling with technicalities, was a smooth, easy narrative, judicially relating the whole case *ab ovo ad mala*, very much as it would be related in a novel—and very few novels are so interesting. This *acte d'accusation* having been read in open court, there were no preliminary speeches by counsel. The president of the court proceeded to interrogate all the witnesses, commencing with the two prisoners. This eminent functionary discharged this delicate duty with firmness and dignity, and did not appear to lean to either side, but to endeavour to sift the facts of the whole case. When any striking point was made by the prosecution the *Avocat-General* chimed in, and similarly the counsel for the defence, who also interrogated the prisoners' witnesses. There appeared to be little, if any, rules of evidence; the witnesses told what they saw, what they heard, and occasionally what they thought—in fact, every witness appeared to answer the questions as he wished, leaving the president and jury to winnow the corn from the chaff. The evidence being over, speeches ensued, and the jury gave a verdict in which every one who followed the case will concur. One curious point:

at an early stage of the trial a newspaper report, alluding to Léon Peltzer and Bernays, spoke of the latter as "his victim." This was directly assuming the guilt of one of the accused, and in this country would have been sharply visited as a contempt of court. No notice whatever was taken. Finally, a good deal of the evidence would here have been omitted from the papers with the simple comment that it was "unfit for publication." In the Belgian journals it was given in full with perfectly Arcadian simplicity and an entire absence of anything approaching to prudery.

ART. IV.—*On the Relations of the Medical Profession to the State, and on the Mutual Relations of the Members of the Profession to each other.*^a By WILLIAM A. M'KEOWN, M.D.; Member of the Senate of the Royal University of Ireland.

WE have been taught from our earliest days, and with most people it is almost a matter of belief, that though merit and worth, whether of individuals or classes, may be neglected or despised, yet sooner or later they are certain to obtain recognition, and to secure for their possessors all the honours, distinctions, and emoluments to which their character, genius, and usefulness entitle them. The medical profession has, I fear, reason to be sceptical of the general truth of this comforting idea. They have been waiting very long and very patiently. From the earliest times in the history of this country no member of the medical profession has been deemed worthy by the Sovereign to be elevated to the same dignity as the members of the church, the bar, the army, and the navy. The bright days of royal favour have not yet reached us. The majority of our most distinguished men, who have spent their whole lives in the service of humanity, and have done work which will bear fruit as long as the records of civilisation endure, have, as a rule, closed their career without any honorary distinction whatever. I do not think that any honour in the power of the Sovereign to bestow would have added any lustre to the name of a Hunter, a Jenner, or a Harvey; but still, that honours should be lavished on other professions whilst the medical profession is overlooked, is a matter for grave dissatisfaction. Had the late Sir James Simpson been a Frenchman doubtless our neighbours, who love to honour merit, would have conferred upon him senatorial honours. Lister—whose patient and

^a The Presidential Address at the Opening Meeting of the Session 1882–83 of the Ulster Medical Society.

laborious researches have revolutionised surgery, made operations, formerly perilous, now comparatively safe, almost banished from hospital the scourges of the surgical wards, diminished vastly the death-roll after all surgical operations, and gained for himself imperishable laurels—would, long, long ago, in any other monarchical State under the sun, have received the highest distinction. But, I ask seriously, has the profession, in pursuit of its just claims to equality, followed the path known to lead to preferment? Has it not shown too little self-assertion, too little professional, and an entire want of public spirit? It has had little political influence, because it never tried to have any—it has had, until quite recently, no organisation—it has never shaken a throne or displaced a minister—it has never been a factor to be taken into account in practical politics. What reason, therefore, had it to expect aught but the reward usually accorded to those who meekly submit to neglect and injustice? To solve the problems of life and disease, and combat decimating plagues, may earn for the physician undying renown; but, to secure proper recognition by the State, the members of the profession must do as the ambitious of every other profession have hitherto done. I should not at all touch upon this question of honours were it not intimately associated with the question of the greatest possible good to be accomplished by the profession for the community.

I do not doubt that, to the philosophic mind, it will appear that a life spent in the quiet, conscientious performance of professional duties, free from the turmoil and bustle of public life, is the best and happiest of all. Were all men, however, to take this view our social organisation, the result of ages of experience, would crumble into dust. We must have public men, and I hope to show that, in the interests of the State, we should have public medical men.

You will gather from what I have said my opinion as to the cause of this extraordinary and long-continued neglect. It is not merit alone which counts in the race for royal favour—it is political service, political power. Efficient public service cannot be rendered nor political power secured except by obtaining seats in Parliament. If Harvey, Hunter, Jenner, and others, have been the investigators and discoverers, where, may I ask, are the medical legislators to give prominence in our statutes to the lessons of their teaching, and where the medical administrators to give practical effect to such legislation in every corner of the empire? We want in our ranks legislators and administrators. To have chief administrators we require that medical men should be trained in the great school of

public affairs. It is surprising how few members of the profession occupy seats in Parliament. I know that to a provincial practitioner it is practically impossible to pursue successfully his profession and devote a large part of his time to Parliament. But why do not many of the most eminent metropolitan doctors, who have enormous incomes and large fortunes amassed, seek to obtain positions of public influence out of regard for the welfare of the people? Their advice on all legislative matters touching the general health of the community would be certain to command the attention of Parliament. Continuous attendance would not be at all necessary, and their professional pursuits would not be interfered with so much as supposed. But, even were some loss incurred, surely many members of the medical profession would be found ready to make some sacrifice, like other members of the community, for the public weal, and to follow the example of the late Sir Dominic Corrigan and of Dr. Lyons, the able representative of the City of Dublin. If the profession only think of adding fee to fee, and do nothing more effective in the interest of the State than tender unsolicited advice, then how can they reasonably expect any honour whatever when ministers are besieged by persons whose votes may either make or unmake a ministry?

How grievously the public interests have suffered from the want of medical members of Parliament, it is impossible to over-estimate. Let us take the sanitary laws in operation in Ireland as an example. By an Act of Parliament passed only a few years ago, the dispensary medical officers were forced, under pain of dismissal, to accept the position of sanitary officers at salaries to be fixed by the boards of guardians. They derive a large part of their incomes from private practice, and self-interest, therefore, naturally suggests that they should not take sanitary proceedings which would tend to the rupture of friendly relations with their private patients. Their public duty and their private interests are, therefore, directly antagonistic. How, then, can it be expected that, by sanitary reports and legal proceedings, they should incur both ill-will and loss of income—and this, too, for a mere pittance of £10 to £20 per annum? Both the salaries paid and the officers selected rather lead to the suspicion that it was never meant that our sanitary laws should be really effective. I wish to do the officers every justice. Perhaps, under the circumstances, no body of men could have been found to have acted with more independence and more in the interests of the public. But the whole system is

a blunder; and if we are to have the health of the people really looked after, the sooner it is supplanted by an efficient one the better. Indeed into the mind of man a more absurd idea could not have entered than that of making practising dispensary doctors the sanitary officers of the country.

What immediate advantages might be expected from the presence of twenty to thirty medical members of Parliament? Parliament would then have on the spot, and in a position of influence, men who, speaking generally, would be up to the current knowledge of epidemic and other diseases—their causes, modes of propagation, and the measures necessary to stamp them out; and who would be familiar with the general agencies actively at work undermining the health of the people. Further, medical men know more of the conditions of life of all classes, from the lowest in the social scale to the very highest, than perhaps any other class in the community, and I would confidently expect that any legislation to which medical men actively contributed would bear the impress of the very widest sympathies. But let me particularise a little the vastness of the interests of the nation in an effective sanitary system, which, be it remembered, can only be brought about by the earnest work of the medical profession. I have not the statistics of the United Kingdom before me, but you all know that hundreds of thousands die annually from preventable diseases. Try to estimate the loss to families and the loss to the State by the untimely death every year of this vast army of persons, who are either bread-winners, or have had large sums expended in their maintenance and education to make them bread-winners. Our losses in war from the weapons of war in the last half century would not probably equal the preventable mortality in a single year. But sanitary affairs are of importance not only to the civil community, but to our offensive and defensive forces. The great question of the health of the army and navy, on which not only our prestige as a nation but our very existence may sometime or other depend, is one especially for medical men. What is the use of a sick army? It is of more importance to have our men well fed, to protect them from unsanitary conditions—and they are legion—than to provide them with rifles a little more or less accurate in aim, or quick in discharge. The sanitary service should be a distinct service in the army, and should be entrusted to medical officers having nothing else to do—all sanitary orders being subject, of course, to the approval of the superior military officer. Besides

these very important matters, there are others in which medical men would be able to give opinions more reliable perhaps than any other members of the community—for example, our poor-law, hospital, and asylum administration, protection of infant life, Contagious Diseases Acts, quarantine laws, the Acts relating to the Infectious and Contagious Diseases of Animals, and our Food and Drugs Acts. Further, medical legislators would be expected to have an influence in promoting scientific research by adequate endowments, and I would not confine that research to any one field. It should embrace not only diseases of man and the lower animals, but of plants. Surely it might well repay the nation to prosecute experiments on an extensive scale to ascertain fully the natural history of the potato disease, to find out a remedy more or less efficient, or to warn the people of all the circumstances of a local or general character which influence it. I do not know of any subject of more direct importance to Ireland. This disease so lessens the food-supply as to lead from time to time to a veritable famine, and is to be charged with no inconsiderable part of our social disorders. The discovery of a remedy for the potato disease would be of more material advantage to the people than many deep-sea dredgings or expeditions to observe the transit of Venus!

But now, leaving the general questions, I revert to sanitary affairs to consider the machinery for carrying out sanitary laws. I would say that with a body of medical members, animated by one spirit, the Government would probably be induced to consider seriously the advisability of creating without delay a great State Department of Health with a Cabinet Minister and a subordinate or two with seats in Parliament. I know of no measure of more importance to the whole community, or one which would give greater satisfaction to the profession. Indeed I note this as a happy omen—that the profession is quite unanimous on the question, and that we only need some activity and the appearance of a number of additional able parliamentary champions to secure attention to our views. I believe that we are on the eve of vast and beneficial changes. We are drifting fast to the era of preventive medicine—then a large proportion of members of the profession will be engaged in the prevention, a more congenial occupation than the cure, of disease.

The chief places in the administration of such a State Health Department, or at least some of them, should be filled by those best

suited by previous training to deal with all the questions involved—viz., medical members with good capacity for organisation and general management of affairs. The present sanitary officers should be relieved of duties which they never sought, and which they accepted only through the compulsion of the Act of Parliament. The whole kingdom should be divided into large districts, each district having a chief medical officer with assistants, all to be appointed and removable by Government, so as to secure that independence of local interests without which no sanitary system will ever work satisfactorily. These officers should all be legally qualified practitioners with diplomas in State Medicine, and should be required to devote the whole of their time to sanitary work in its broadest sense. The chief sanitary district officer should have some legal training and should hold the commission of the peace. He should be empowered to hold sworn inquiries when to him it should seem fit in all sanitary matters of importance, such, for example, as the cause, progress, and avenues of dissemination of epidemics. All new houses should be inspected and certified by himself or one of his subordinates as fit for habitation before occupation; the sewerage and water supply arrangements should receive his special attention. To inquire into all matters affecting, immediately or remotely, the health of the whole or any section of the community, should be within the functions of the sanitary officers.

Although I have only spoken of the advantage to the public arising from the accession of a large number of medical men to the parliamentary ranks, and the creation of a great State Department of Health with its officers in every district of the kingdom, we cannot close our eyes to the fact that the profession would thereby derive much dignity and honour. I doubt not also that, with such a department, the medical profession would furnish more aspirants for parliamentary honours than at any previous time, and that the too well-merited reproach of want of public spirit with which the profession has been so often charged would soon be a thing of the past. Let us hope that we may soon have in our British Parliament representatives of medicine not less distinguished than the late Nélaton in the French and Virchow in the German Chamber.

But now I proceed to the second branch of my subject, and one which, though it may seem to bear directly on the mutual relations of the members of the profession to each other, yet involves the great question of the elevation of the profession in the highest degree. Dr. Thompson, the late President of the North of Ireland

Branch of the British Medical Association, delivered some time since an admirable Address. He detailed a scheme for the defining of different grades of the profession and regulating fees. No doubt he had given the matter much attention, and all must concede that he dealt with the question in a very able manner. As you are a'l quite familiar with his views, I shall not enter upon any explanation. I think his proposals hardly adapted to the circumstances of the time. My chief objection to his scheme was this, that I did not conceive it possible to bring about such a change by any spontaneous action of the medical profession. The profession will, in my opinion, only be reformed and advanced by action from without. The self-interest of the public is the lever I would use. Law has seldom been reformed by the spontaneous action of practising lawyers, and Church reform has been very seldom the work of clergymen. I trust this may not seem a very startling proposition. I believe, however, that all professions are so thoroughly conservative that they would hardly ever budge an inch if not impelled by controlling influences outside. Now, let us examine the hollowness of our whole system of consultations. A patient under the care of a general practitioner drops into the rooms of a consulting doctor, sometimes with a verbal message or a short letter, and as often without either. He undergoes an examination which, under the circumstances, may be very imperfect, receives verbal advice, and very often an opinion so ambiguous, so undecided, as to be practically valueless. Hurried examinations, an endeavour on the part of consultants to do more than they legitimately can, lead to the cultivation of a talent in too much repute—that of concealing all doubts and difficulties, and of giving opinions which in any event will turn out quite correct. Of this course I would even dispute the worldly wisdom. I affirm without hesitation that if we are to have medicine and surgery raised more and more to the dignity of a science, and the profession advanced in worldly estimation, we should aim at having more precise knowledge, more early and accurate diagnosis, and more certain prognosis and treatment. This can only be secured by an expenditure of time, by giving to each individual case the most painstaking examination. I do not conceal from myself the complex questions which may render a clear opinion almost out of the question, but this only demonstrates the imperfection of our knowledge and the hopelessness of advancing medicine and surgery, which have already attained such vast dimensions, by the labours of men who pretend to an

“all-round” capacity. We require concentrated, not diffuse, light to dispel the mists. We must look for the attainment of truly scientific knowledge to the labours of educated physicians and surgeons who, wisely reckoning the slowness of human progress and the shortness of the span of man’s active life, fix their attention mainly on limited departments, explore fields shrouded with darkness, endeavour to add new territory to the domains of knowledge, and utilise all previous discoveries to guide them on their chosen paths of research. Practically almost all our advances have been made by men who have so concentrated their efforts.

I now intend to suggest a mode of consultation which would, I submit, improve greatly the status of the general practitioner, and raise a class of consulting practitioners of special eminence. Let us take a lesson from the legal profession. A man of means, if touched in pocket or in feeling, consults his solicitor, requires a case to be stated for counsel, a fee to be marked according to the difficulties of the case and the standing of counsel. Money is very often no object, and this even in cases involving a mere trifle or arising from offended vanity. Yet, in matters of health and life we have no trouble taken, often not even a letter from the attending doctor; the consultant receives his one, two, or five guineas, as the case may be, for work which, if thoroughly done, would require the examination of almost every organ of the body, complex urinary tests, frequent microscopic examinations, the use of the stethoscope, laryngoscope, ophthalmoscope, sphygmograph, or hæmatocytometer. How many men, in large practice, for any ordinary fee, could be expected to do this work, and how many men are capable? I fear not one but several physicians and surgeons of eminence in special departments would be required to give reports on these questions. Is it to be supposed that a man of ample wealth would hesitate for a moment in a matter of such extreme importance as a question involving his own life to pay liberally for a complete statement of his case by his family attendant, and suitable fees to consultants for a full opinion on every point? We have too little formality in the profession. We are got at much too easily. To carry out such a system as this—and of course it would be applicable only to persons of considerable means—the men in general practice would require more leisure, and the consultants would be obliged to limit very much their consultations both in number and scope. Then look at the incentives to care on the part of every member of the profession.

The doctor who wrote the case would find his credit involved, and would not, therefore, spare any trouble to show himself conversant with all the bearings of the malady; professional men would be very careful about the preparation of documents which might be kept for future reference amongst the papers of their patients. The consultant would be obliged to be equally careful, as in case of an unfavourable opinion he would perhaps be subjected to the judgment of men more able or more careful than himself. This is precisely what happens from day to day in the profession of the law. In case a barrister gives an opinion which is not so clear as to satisfy the solicitor or his client, the same case is sent to one or more counsel for further advice, and the opinions compared. How much better this than the utterly unsatisfactory, haphazard system which has prevailed up to the present time in medicine. I need not point out to you that the adoption of such a system would lead to the cultivation of special branches by consultants to an extent hitherto unknown.

I need not say that I have been a careful observer of a tone of speech which has been cultivated in many quarters, and which is based on false notions of human capabilities, and of what is best for the interests of the public and of the profession. We have heard of the "all-round" man; but, if you allow me to say so, I think the pretension by any man to be what has been called the "all-round" man, bears with it the evidence of rather too much self-satisfaction. I should like to see the man whose opinion in every branch of medicine and surgery, or even medicine or surgery, would be accepted by the educated public with any confidence. Consultants, no matter how great their attainments, or how wide their education, come to be specialised, not simply by their own natural taste and peculiar capacity, but by the discernment of the public, and the very action of the profession itself. In case of ovarian or uterine tumours in wealthy patients, do you not select Spencer Wells or Keith; and are not these gentlemen, through your very recommendations, and by the influx of patients suffering from special ailments, obliged to become special practitioners, their whole life-work being specialised? In obscure nervous affections do you not consult Brown-Séquard, Charcot, or Hughlings Jackson? I might go over the whole range of medicine and surgery in illustration of the tendency of the profession to move towards specialism, at least as regards consultants and operating surgeons. I anticipate, too, that our future

advances will be by special practitioners—in fact, all our progress for a great number of years has, as I have already said in another way, resulted from a concentration of talent on some particular department of medicine or surgery by men of good general knowledge, who have directed their energies in a particular groove.

I can only say for myself that, in my opinion, the questions to be solved in connexion with even one of the departments in which I chance to be actively engaged might occupy, with advantage, the whole lives of many able men—I allude to the department of the ear. No doubt a vast deal has been done in recent years, and the results of the most brilliant character are commonly obtained ; but still there are problems, most important problems, waiting solution. I ask what man engaged in the multifarious duties of general practice can afford to give his time for that patient observation, that close study of the individual cases which are essential to make a single step in this difficult department? To a man engaged in the hurry-scurry of general practice from morning till night and night till morning, the thing is wholly impracticable; and if we are to wait for the advance of knowledge of ear-disease for some universal genius, we shall wait, I fear, till the “crack of doom.”

But not only is the tendency to a specialisation of consultants, but there is a steady advance towards more or less of specialism generally. There is a spread of knowledge amongst the general community which will precipitate the change. Families, instead of having one doctor, will soon have several. There will be some re-arrangement ; but it will be a positive advantage both to the public and the profession. I have no doubt that it will be soon quite common for families to consult independently and directly the doctor they consider best qualified to give effective aid in any particular ailment, instead of consulting really or formally one for everything. The gynæcologist would have charge of midwifery and diseases of women; the ophthalmic and aural surgeon, of cases of disease of the eye and ear; the general surgeon, of general surgical ailment; and the physician, of the ordinary medical cases.

I trust that I have been as plain as I intended to be. I have, no doubt, touched on many knotty points, and I may have run counter to some pet professional notions. At the same time, I would have you bear in mind that, in all human affairs, diversity of opinion and honest but conciliatory maintenance of a position believed to be right, is the best safeguard against that absolute stagnation which is alike the ruin of states and professions.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Census of Ireland, 1881. General Report. Dublin: Printed by Alexander Thom & Co., for Her Majesty's Stationery Office. 1882. Quarto. Pp. 427.

[*Concluded from page 40.*]

Referring to the Sick in the Hospitals we find:—

“In 1851 there were 36 INFIRMARIES, which had been reduced to 35 in 1861. Between the latter year and 1871 the number further decreased to 33—that for the county of Wicklow, at Baltinglass, having been closed, and the Clonmel Infirmary having become attached to the Workhouse in that locality. In 1851 there were 1,748 patients in the Infirmarys then in existence in Ireland, and although these institutions numbered only one less in 1861, and three less in 1871, still the number of patients was less in 1861 by 212, and in 1871 by 541, than the number in that year. In 1871 there were 1,207 persons in them; the amount of accommodation was 2,137, and during the previous ten years 184,885 patients had been admitted; in 1881 the number (32) was one less than in 1871 (the Infirmary at Drogheda having been closed); the amount of accommodation in these institutions in 1881 was 2,175, there were 1,120 patients—681 males and 439 females—therein, and 158,348 persons had been admitted during the decade ending in 1881.

“GENERAL HOSPITALS, which numbered 15 in 1851, 19 in 1861, and 21 in 1871, amounted also to 21 in 1881.

“The Hospitals of this description opened since 1871 are St. Michael's, Kingstown, in the county of Dublin; Castleisland Hospital, and the village Hospital at Valentia, both in the county of Kerry. In the Returns for 1871, ‘Convalescent Homes,’ and the Royal Hospital at Kilmainham, were included with the General Hospitals. On the present occasion the first named are shown separately in Table 126, and the latter included with Charitable Institutions in Table 132. The Spinning Mill Hospital, at Banbridge, county of Down, has been converted into a Fever Hospital, and the Rathdown Fever Hospital, situated at Monkstown, in the county of Dublin, described as a ‘Fever’ Hospital in previous Reports, has been since converted into a General Hospital under the name of the ‘Monkstown Hospital.’

“The number of patients in General Hospitals, which increased from 787 in 1851, and 939 in 1861, to 1,092 in 1871, amounted to 1,145 in 1881. This class of Hospitals are now capable of accommodating 1,800 patients; and during the last decade admitted 141,592.

“In 1851 there were 61 FEVER HOSPITALS in operation (exclusive of 15 open under the provisions of the Act 6 & 7 Vic., cap. 92, sec. 16); of that number there were only 39 in existence in 1861. During the decade ending in 1871 only one Fever Hospital was opened—viz., that at Portlaw, in the county of Waterford; and although in the interval some were closed and others attached to Workhouses, still others temporarily closed on the 7th April, 1861, were re-opened, and thus the number in operation on the 2nd of April, 1871, was 35, or only 4 less than in 1861; 11 of the Fever Hospitals in existence in 1871 were empty, and 2 were occupied by pauper patients, who were enumerated along with the sick in Workhouse Hospitals. In 1881 the number was 30, of which 4 were empty. The Fever Hospitals returned in 1851 and 1861 were capable of accommodating 3,750 and 2,234 patients respectively, whilst those returned in 1871 had only room for 2,032; in 1881 the amount of accommodation was 1,488. There were 1,117 patients in this class of Institutions at the time of taking the Census in 1851, 356 in 1861, 262 in 1871, and 305 in 1881—153 males and 152 females. During the ten years 1861–71 there were 61,214 patients admitted to these Hospitals, whilst the admissions during the decade 1841–51 numbered as many as 253,886. In the decade ending in 1881 the number of admissions amounted to 50,921.

“As one of the objects of Fever Hospitals is to prevent the spread of infective disease, it is interesting to note that of 2,274 persons returned as suffering from infective fevers (small-pox, measles, scarlatina, diphtheria, whooping-cough, and fever), 383 were in hospital, and 775 in Workhouse Hospitals, the remainder being sick at their own homes, in many instances spreading disease amongst their families and neighbours.

“There were 11 LYING-IN HOSPITALS and other Hospitals for Women returned in 1851 capable of accommodating 289, and containing 77 patients. Between that year and 1861 the number of Hospitals had decreased to 9, the accommodation to 227, and the number of patients to 54. Between the latter year and 1871 the Lying-in Hospitals at Kingstown and Wexford were closed, and St. Anne’s Lying-in Hospital at Killarney opened. The eight Hospitals of this class in existence in 1871 had accommodation for 213 patients; the number in them was 82; in 1881 the number amounted to 7, and they contained 144 patients, including the Samaritan Hospital for Women in Belfast, which was opened in 1872: it had on last Census night accommodation for 26, and contained 19 patients. The admissions to Lying-in Hospitals during the decade 1841–51 amounted to 39,822, during the decade 1851–61 to

29,970, during the decade 1861–71 to 29,170, and during the recent decade to 31,288.

“**OPHTHALMIC HOSPITALS.**—In the year 1871 there were three Ophthalmic Hospitals in Ireland, capable of containing 78 patients. The accommodation in 1881 was 104, showing an increase of 26 beds since the year 1871. The Ulster Eye, Ear, and Throat Hospital has been founded in Belfast since the Census of 1871, and is capable of accommodating 24 patients; the number of inmates on last Census night was 14 (9 males and 5 females).

“**THROAT HOSPITAL.**—In addition to the Ulster Eye, Ear, and Throat Hospital just referred to, an Hospital specially devoted to persons suffering from throat affections was founded in Dublin in 1877, and it contains accommodation for 8 patients; on Census night there were 2 inmates in this Institution.

“**ORTHOPÆDIC HOSPITALS.**—In 1871 there were no institutions in Ireland specially devoted to the treatment of deformities; since that date two institutions have been founded in Dublin—namely, the National Orthopædic Hospital, founded in 1875, and the Dublin Orthopædic, founded in 1876; the former has accommodation for 24, the latter for 33 patients. On the Census night these institutions contained respectively 14 and 20 patients.

“**CHILDREN’S HOSPITALS.**—In 1871 there were not any hospitals returned as specially devoted to the accommodation of children, but in 1881 we find that in addition to the accommodation provided at the Orthopædic Hospitals and institutions for women and children, there are 128 beds in hospitals specially provided for the treatment of sick children. In 1872 St. Joseph’s Hospital was founded in Buckingham-street, Dublin, from whence it was removed to Upper Temple-street in 1879. On Census night the accommodation provided in this hospital was for 30, and the number of inmates was 22.

“Since 1871 three hospitals for children have been founded in Belfast—namely, the ‘Children’s Hospital,’ the ‘Ulster Hospital for Children,’ and a Children’s Hospital in connexion with the Royal Hospital. The first named, founded in 1873, has accommodation for 40 patients, and contained 30 on Census night; the second, founded in 1872, has accommodation for 24 patients, and contained 12 on Census night; and the last named, opened in 1874, has accommodation for 34, and contained 22 patients.

“**HOSPITAL FOR WOMEN AND CHILDREN.**—In addition to lying-in hospitals and special hospitals for children there is an hospital in the city of Cork for women and children with accommodation for 28. On last Census night it contained 23 patients.

“The Westmoreland LOCK HOSPITAL, in Dublin City, opened in 1792, was the only one of the class in Ireland until the year 1869, when similar

institutions were opened, one in the town of Kildare, approximate to the Curragh Camp, and another in Cork City. On the 30th of March, 1851, the Westmoreland Lock Hospital accommodated 101 patients, being the maximum number it was then capable of containing, and on the 7th of April, 1861, only 88, although its accommodation had been increased to 150 beds. At the taking of the Census in 1871 the three institutions of this class had accommodation for 234 and contained 121 patients; in 1881 the accommodation in these institutions was for 238, and the number of patients therein was 109. The admissions to the Westmoreland Lock Hospital for the decade of 1841–51 were 8,239; for the decade 1851–61 they were 7,928; for that ending in 1871 they were 7,935, and for the recent decade they were 7,581, which, along with those to the Lock Hospitals at Kildare and Cork, 1,924 and 2,645 respectively, makes a total of 12,150 admissions to this class of hospitals for the decade 1871–81, against 8,852 for the preceding 10 years.

“HOSPITAL FOR SKIN DISEASES.—Only one such exists in Ireland—namely, the Hospital for Skin Diseases in Belfast, founded in 1875. It has accommodation for 16 patients, and contained 8 on Census night, 1881.

“NAVAL AND MILITARY HOSPITALS.—In 1871 were included for the first time the sick in Military Hospitals, as the military serving in Ireland were included among the general population; but the accommodation in these hospitals and the number admitted to them during the ten years could not on that or the present occasion be ascertained. The patients in the Hospital for Soldiers’ Wives and Children on the North Circular-road, Dublin city, and in the Naval Hospital at Haulbowline, in the county Cork, have been, on the present occasion, as in 1871, included among the sick in this class of hospitals. On the night of the 2nd of April, 1871, there were 827 patients in Naval and Military Hospitals in Ireland; on the night of the recent Census the number was 997.

“The ‘infirm wards’ and hospitals of the workhouses in Ireland must be considered as the principal public accommodation for the sick poor. Thus, while there were 4,170 in the institutions commonly regarded as hospitals, there were 18,115 sick poor persons accommodated in the buildings connected with the 163 poor-law unions of Ireland. Thus, about four-fifths of the sick in public institutions were provided for by the poor-law authorities. A large proportion of the 18,115 ‘Sick in Workhouses’ should not be classed as ‘sick paupers,’ the fact being that in country districts and small towns where no public ‘medical charities’ exist, the sick among the artisan and labouring class make use of the Union Hospitals in the same manner as similar classes in the great towns use the hospitals supported by voluntary contributions and charitable endowments. In estimating the accommodation for the sick poor in Ireland these great Union Hospitals are too often overlooked by those who take an interest in this important branch of charity.”

Under the head of the "Permanently Diseased," the Commissioners first deal with the number and condition of the blind in Ireland:—

"The result of the present inquiry shows that the number of the totally blind in Ireland on the Census night of 1881 was 6,111, or 236 less than in 1871; allowing, however, for the decrease of population during the decade, the returns show that the proportion of blind to the population of Ireland is slightly greater than in 1871—namely, 1 in 847 in 1881, against 1 in 852 in 1871."

Special inquiries were instituted into the previous history and condition of each of the 6,111 blind persons above referred to, and these added to the present records contained in the Census Office, which can be referred to again at the next Census.

"In order that the true proportion of the blind properly belonging to the population of each locality may be found in the statistics, the blind in public institutions have, in constructing the Tables, been distributed according to the localities from whence they came.

"The proportion of sexes among the blind on the present occasion shows a slight increase in the number of females, compared with the returns of 1871, but a decrease when compared with those of 1861, the proportion being, according to the returns of 1861, 100 males to 118·4 females, and, according to those of 1871, 100 to 110·0, whereas on the present occasion it is 100 to 111·5. It will be seen by the foregoing that the majority of the blind, according to the Census returns for the past three decades, were of the female sex, the average proportion for these periods being 100 males to 113·4 females.

"If the ratios to the populations of the provinces be compared, it will be found to be highest in Munster, being 1 in every 576, and least in Ulster, being but 1 in every 1,117. The counties in which there has been the greatest absolute increase in the number of the blind compared with 1871 are Waterford, Donegal, Dublin, Clare, and King's; and the greatest increase in proportion to the population has taken place in Waterford, King's, Clare, Westmeath, and Donegal counties.

The absolute decrease in the number of the blind has been greatest in the counties of Cork, Tipperary, Kilkenny, Tyrone, and Mayo; whilst the greatest decrease in proportion to the population has taken place in Kilkenny, Tipperary, Louth, Queen's, and Fermanagh counties.

"Table 100 also shows, by ages and sexes, the state of Education and Marriage among the Blind. We learn from this table that 3,217 of the 6,111 were educated either previous or subsequent to having lost their sight; and that 2,894 returned as blind were totally uneducated. Among the 3,217 persons who were educated the proportion of the sexes was

100 males to 88·3 females; and among the 2,894 uneducated persons, the proportion was 100 males to 144·8 females. It would therefore appear that the greater proportion of the educated blind are males, and of the uneducated, females. From a comparison of this table with the analogous one in the Reports on the "Status of Disease" of 1861 and 1871, it is gratifying to find that there has been a remarkable progress of education among the blind, the number of educated in 1861 being 2,947; in 1871, 3,075; and in 1881, 3,217, although there has been a decrease in the total number of the blind.

"The experience of previous Censuses having shown that the number of blind persons who followed each class of specified occupations capable of classification was so small, and the number of occupied blind so insignificant, and that evidence derived from such tables was practically useless, it has been decided in the present case to simply indicate the social position of the blind members of the community by giving the number engaged in specified occupations respectively in an alphabetical list. From this latter we find that of 2,576 blind persons whose actual or former occupation was specified—Farmer was given as the occupation of 633 persons, 540 males and 93 females; 442 persons—416 males and 26 females—were returned as labourers; 425 persons—35 males and 390 females—were servants; and 199—188 males and 11 females—were returned as musicians. Housekeeper is returned as the previous or present occupation of 140 females; and pensioner as that of 108 males. Next in order we find 89 persons, all males, basketmakers. 42 females were returned as seamstresses or shirt-makers, and 41 persons—32 males and 9 females—were dealers. There were 28 persons—21 males and 7 females—given as weavers. Gentleman is returned as the occupation of 16 persons, and gentlewoman as that of 11. Boot and shoe maker was the occupation of 26 persons—24 males and 2 females. There were 19 shopkeepers—15 males and 4 females—returned among the blind. Carpenter was the occupation of 18 males, and knitter that of 17 females. There were 3,535—1,117 males and 2,418 females—or considerably more than half of the blind whose occupation, if any, was unspecified.

"In 1851 there were 6 institutions in existence for the relief of the blind. In 1861, these had increased to 9; since which date no new institutions of this class have been founded, although extensive improvements and additions have been made to those existing at that date.

"The institutions mentioned in table 102 were, in 1871, capable of containing 823 inmates, while in 1881 the number for whom there was accommodation had increased to 901. In 1851 the accommodation of this description was only calculated for 270. Not only has the accommodation increased, but the actual number of inmates on the Census night of 1881 was 470, against 371 in 1871, 357 in 1861, and but 131 in 1851. This shows a great advance in this form of charity."

The Commissioners have had to rely on hearsay evidence to a large extent in investigating the causes and nature of the diseases which deprived the sufferers of their sight, therefore the Commissioners admit that the record is not as perfect as could be desired. From the remarks under the head "Causes of Blindness" we have extracted some of the more important particulars:—

"A large number of cases of blindness have been attributed to smallpox in the returns for each successive Census period. In 1871 the number so stated was less by 199 than in 1861. We have again to announce a further diminution—the number returned in 1881 being 359, against 526 in 1871, showing a decrease of 167. The diminution of destructive eye affections in smallpox is to be attributed to two causes. In the first place, the modifying influence of vaccination has diminished not only the frequency of smallpox, but also the virulence of the disease, and, other things being equal, loss of sight from smallpox should be less frequent than formerly. The other important element, however, is the fact that ophthalmia—to be referred to further on—has also diminished. It is a peculiarity of the smallpox eruption to attack most severely the more vascular parts; hence, an eye influenced by ophthalmia is much more liable to the attack of the smallpox eruption than a healthy eye.

"To *Measles* are attributed 52 cases of blindness; to *Scarlatina*, 34 (in 1871 also 34); to fever, 98 (in 1871 it was 99).

"*Ophthalmia and External Inflammations*.—Ophthalmia has been one of the great pests of Ireland for many years. In the report of the Census Commissioners for 1871 will be found an interesting account of this terrible scourge, by Sir W. R. Wilde, extracted from a paper by him laid before the council of the Société des Bienfaisances. This paper contains an historical summary of the prevalence of this disease in Ireland, from time to time, from the year 1701 up to 1852.

"The number of cases of blindness in Ireland attributed to ophthalmia was, in 1861, 1,962, or 1 in every 2,955 of the population; in 1871, 1,642, or 1 in 3,296 of the population; in 1881, 523, or 1 in every 9,894 of the population. It would thus appear that this disease has been reduced to a comparatively low figure. The disease chiefly prevailed among those who were located under the extreme unsanitary conditions usually associated with poverty. As a matter of course, considerable numbers of these became inmates of workhouses, the consequence being that a continuous flow of cases of ophthalmia were admitted to the workhouses, and, the disease being of an infective character, great difficulty was experienced in preventing it spreading among the workhouse inmates. This difficulty has now been to a large extent overcome, and the number of workhouse inmates affected with ophthalmia is now very limited—in fact, the Local Government Board have ceased to collect the special

statistics connected with this disease, which were formerly deemed necessary. It also appears from the return of the sick that the number of cases of ophthalmia in Ireland was much less than at any previous Census period in which such statistics were collected.

“*Rheumatic Affections.*—Twenty-six cases of blindness were ascribed to rheumatic affections in 1881. In 1871 the number so returned was 144. The returns under this head cannot be considered of a very reliable character, as the term rheumatism, when popularly used, includes many painful affections which would not be so classed by scientific nosologists.

“*Amaurosis.*—This affection, known by the name *gutta serena*, is really more of a symptom than a disease, but was formerly looked upon as a specific form of disease; as knowledge increases, the number of persons described as suffering from amaurosis will necessarily diminish, and the disease will be returned under some more correct head. Thus we find the number of cases ascribed to amaurosis is only 20 in 1881, against 65 in 1871, and 110 in 1861.

“*Diseases of the Brain and Nervous System.*—Under this head have been registered all cases assigned to paralysis, apoplexy, epilepsy, convulsions, disease of the brain and optic nerve, neuralgia, insanity, nervous affections, sunstroke, and also those ascribed to grief, fright, pain in the head, &c., and those that became blind suddenly. The number returned from these causes amounts to 156, against 331 in 1871.

“*Scrofula.*—There were only 14 cases of blindness attributed to scrofula and scrofulous affections, against 72 cases in 1871. This large disproportion is probably owing to some cases having been more properly returned under the head of ophthalmia, although there is reason to believe that a diminution in scrofulous diseases has taken place during the past decade.

“*Mechanical Injuries.*—It has not been found practicable to separate special injuries of the eye itself from the more general injuries to the head which might have undoubtedly produced blindness; accordingly, the mechanical injuries have been classed as follows:—

“*Injury by Gunpowder.*—Under this head there are registered 60 cases—males. They chiefly occurred from blasting rocks. In 1871 there were 89 cases registered under this head.

“*Gunshot Wounds.*—19 cases of blindness—17 males and 2 females—were returned as caused by explosions of fire-arms, &c. In 1871 the cases registered under this head were included in ‘Injuries by Gunpowder.’

“*Unsuccessful Operations.*—There were 10 cases of blindness attributed to ‘Unsuccessful Operations.’

“*Injury by Animals.*—In 1871, 27 persons were returned as having become blind on account of ‘Injuries by Animals.’ On the present occasion 22 are so returned.

“*Injury by Lightning.*—There are 12 cases—9 males and 3 females—attributed to this cause. In 1871 there were 10 similar cases.

“*Injury Unspecified.*—Under this head have been registered all cases in which the nature of the accident or injury was not specified. They amount to 92—56 males and 36 females. In 1871 there were as many as 224 cases so returned.

“*Cataract.*—In this disease loss of sight is produced by the crystalline lens or its capsule becoming opaque, and obstructing the entrance of the rays of light. Only 3 of the 311 cases of congenital blindness are attributed to it; it is often hereditary, and very frequently results from injuries, and also from internal inflammation. It is also a common cause of impaired vision after 50 years of age. Cataract is very frequently confounded by the public with cases of opacity of the cornea, and even staphyloma, but medical practitioners can easily recognise it. There are 402 cases attributed to it. There were 452 cases assigned to this cause in 1871. Of the 402 persons who were blind from cataract, 3, as before stated, were born so; 55 became so under 20 years of age; 165 when they were between 20 and 50 years of age, and 179 when past the latter age.

“*Consequence of Childbirth.*—Cases attributed to ‘Weed,’ ‘Nursing,’ ‘Childbirth,’ &c., have been tabulated under this head. They amount to only 9 on the present occasion, and in 1871 those attributed to the same causes numbered only 5.

“*Unspecified.*—Under this head are included 3,704 cases. They consist chiefly of cases in which it was stated in reply to the secondary inquiry that the cause of blindness was ‘unknown,’ ‘will of Providence,’ ‘natural causes,’ ‘gradually,’ ‘effects of whirlwind,’ and in fact, all cases which could not be included under any of the foregoing heads. Some of the 297 cases of congenital blindness included under this head were attributed to frights received by the mothers during pregnancy.”

The following statement comprises matters of considerable interest, but shows a lamentable amount of ignorance prevailing among the blind:—

AGES.	Educated previous to Blindness, but not further Educated subsequently.			Uneducated previous to Blindness but Educated subsequently.			Educated previous to Blindness, and received special Literary Education subsequently.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Under 20 years, . . .	32	19	51	33	56	89	9	8	17
20 and under 30 years,	53	54	107	18	29	47	18	13	31
30 „ 40 „	122	136	258	11	31	42	13	20	33
40 and upwards, . . .	1,356	1,096	2,452	15	21	36	28	26	54
Total, . . .	1,563	1,305	2,868	77	137	214	68	67	135

The Deaf and Dumb next occupy the attention of the Commissioners, and upon this subject they give elaborate details in continuation of the Report instituted in 1851. The Deaf and Dumb in public institutions are, as in the case of the blind, distributed in the tables according to the localities from whence they came.

An important table, showing by provinces the total number of Mutes from all causes in the different counties in Ireland, is divided into two sections, the "Deaf and Dumb" and the "Dumb not Deaf"—the former numbering 3,993, and the latter 1,143.

The true Deaf and Dumb, born with impairment of the organ of hearing, and without other defect, may be taken as most faithfully representing the actual amount of Deaf-dumbness in any country. Upon the inquiry instituted on the 3rd of April, 1881—3,092 were returned as belonging to this class, being 205 less than those registered in 1871. The sexes in this class, according to the present returns, are 1,682 males, and 1,410 females.

In addition to these, 753 persons were returned as deaf and dumb from disease or accident; in 68 instances the nature of the cases could not be ascertained, and 80 persons were paralytic or idiotic.

The total deaf and dumb from all causes have decreased from 4,747 in 1851, 4,930 in 1861, and 4,467 in 1871, to 3,993 in 1881.

We cannot, within reasonable limits of space, go into the many particulars tabulated by the Commissioners; and, without the latter to refer to, our description would be almost unintelligible. Elaborate details are given as to relationships, hereditary predisposition, consanguinity of parents, &c.—the result being to generally confirm the opinion that consanguinity of marriage promotes mutism, and that mutism is hereditary.

During the progress of this inquiry, the following interesting cases came under the notice of the Commissioners:—No. 1.—In a case of two mutes in a family, both parents, two uncles, two aunts, and one cousin, were all born deaf and dumb. No. 2.—In a case of five mutes in a family, neither parent was deaf and dumb, but four cousins were so afflicted. No. 3.—In the case of one mute in a family the parents were cousins; one uncle, two aunts, and three cousins on the mother's side were deaf and dumb. No. 4.—In the case of three mutes in the family, the parents were not deaf and dumb, but the maternal grandfather was a deaf mute. No. 5.—In a case of ten mutes in a family the parents were not related, nor deaf and dumb, nor were any other relatives. No. 6.—In a case

of six mutes in one family there appears to have been no cause assigned, nor other relatives afflicted.

An inquiry having been carried out at the Censuses of 1851, 1861, and 1871, as to the condition regarding deafness and dumbness of the children of congenital deaf mutes, and the result in each Census being of a negative character, it was not considered necessary to repeat this investigation, as it appears evident that the question of deafness and dumbness in the parent has no influence in propagating the defect. It must, however, be mentioned that the number of instances affording opportunities for such inquiries are very few, and the same cases occurred in a large proportion of those inquired into at successive Censuses.

The causes assigned for mutism contain many which would be amusing if they were not connected with such a melancholy subject, and did not, in some cases, point to gross ignorance and superstition on the part of the relatives of the afflicted persons.

It would appear from the report that comparatively little progress has been made in the education of the deaf and dumb in Ireland, and the Commissioners suggest that Poor Law Guardians should be compelled to provide for the proper education of deaf and dumb paupers. In this suggestion we heartily concur.

The inquiry into the number and condition of lunatics and idiots in Ireland presents some curious results, some of which—such as the increase of lunatics and idiots—may be partly ascribed to the more minute and extensive character of the inquiries instituted at each successive Census. Other results—such as the number of the mentally afflicted under each form of lunacy-idiocy—may, we regret to say, be attributed to the indefinite nature of the information furnished to the Commissioners. On the whole, however, the statistics under this head possess considerable value. As to the progress made in collecting information since this form of inquiry was connected with Irish Census returns, we quote the following from the Report :—

“As stated in the ‘Status of Disease,’ 1871, ‘The first investigation into the number and condition of the lunatics and idiots in Ireland was made under the Census Commission of 1841, but at that time only the number of those located in asylums, workhouses, gaols, and hospitals was ascertained; it amounted to 2,925 lunatics and 333 idiots. In 1851 the investigation was prosecuted further, and an inquiry made as regards the number of lunatics and idiots, either at large or in the custody of their friends. The result of that investigation was the return of 5,074

lunatics and 4,906 idiots. The investigation was repeated under the Census of 1861, when 7,065 lunatics and 7,033 idiots were returned. A similar course was pursued in 1871 as in 1861, and it was found that at the time of that Census there were in Ireland 9,763 lunatics and 6,742 idiots. On the present occasion, the number of lunatics enumerated on Census night was 9,774 (4,857 males and 4,917 females)—943 were at large, 7,547 in asylums, and 1,284 in workhouses; and the number of idiots 8,639 (4,674 males and 3,965 females), of whom 4,548 were at large, 1,896 in asylums, and 2,195 in workhouses.

“At the taking of the Census of 1851, there were 273 lunatics and 13 idiots in prison, in 1861 there were 273 lunatics and 21 idiots, in 1871 there were 5 lunatics and 2 idiots, in 1881 there were not any lunatics or idiots confined in prisons.”

It is extremely gratifying to note that the barbarous custom of confining lunatics to prison has at length disappeared, mainly, we believe, through the instrumentality of Lord O’Hagan’s Act regarding dangerous lunatics.

The following statement shows the number of lunatics and idiots in Ireland in 1851, 1861, 1871, and 1881, at large, in asylums, in prisons, and in workhouses:—

Years	LUNATICS					IDIOTS					Total Lunatics and Idiots
	At Large	In Asylums	In Prisons	In Work-houses	Total	At Large	In Asylums	In Prisons	In Work-houses	Total	
1851	1,073	3,234	273	494	5,074	3,562	202	13	1,129	4,906	9,980
1861	1,602	4,613	273	577	7,065	5,675	403	21	934	7,033	14,098
1871	1,343	7,141	5	1,274	9,763	5,147	410	2	1,183	6,742	16,505
1881	943	7,547	—	1,284	9,774	4,548	1,896	—	2,195	8,639	18,413

As we have already pointed out it is probable that the great increase of (nearly double) the number of lunatics and idiots in Ireland since 1851 in spite of a diminished population is only explainable on the supposition that at former Census periods the returns were not as correct as in 1881.

According to the Census returns for 1851 the ratio of lunatics to the population was 1 in every 1,291; in 1861 it was 1 in 821; in 1871 it was 1 in every 554; and in 1881 1 in 529—the ratio in the Province of Leinster being 1 in 482; Munster, 1 in 493; Ulster, 1 in 625; and Connaught, 1 in 729.

We cannot depend too much on the reliability of the analysis of the returns of the description of lunacy and idiocy given in the

Report, as many of the returns were of a vague nature. The Commissioners have certainly made the best of the imperfect material which seems to have been furnished. It is much to be regretted that a Commission, specially qualified by its comprising a physician and a barrister specially skilled in matters connected with lunacy law as Dr. Abraham is, should not have had better materials to work upon when endeavouring to give an account of the lunatics and idiots in Ireland.

The public institutions in Ireland are classified under the heads of Workhouse Hospitals, Public Lunatic Asylums, and other Public Institutions and Barracks. The inmates of these were distributed as follows:—Exclusive of military barracks and the Royal Irish Constabulary Depôt, the total number of institutions at the date of the Census was 597, inhabited by 95,115 persons, of whom 9,039 consisted of officers of the establishments and their families, and 86,076 were inmates for whom the institutions were primarily intended. Amongst the institutions are 165 workhouses, with 55,830 inmates; 113 hospitals, with 3,310 inmates; 26 public lunatic asylums, with 9,034 inmates; 76 prisons and bridewells, with 3,280 inmates; 10 reformatories, with 1,195 inmates; 49 orphan asylums, with 1,922 inmates; and 57 certificated industrial schools, with 6,160 inmates.

Table 124, on page 306, shows, by Provinces, Counties, &c., the number of inmates of each class of the principal institutions, and Table 125, on page 307, shows the proportion of the inmates to every 10,000 of the population.

With the exception of those in prisons and bridewells, the number of whom shows a slight decline, the inmates of the several classes of institutions are absolutely and relatively more numerous than in 1871. The number of paupers in workhouses is equal to 107·9 in every 10,000 of the population, against 90·4 in 1871; patients in hospitals are equivalent to 6·4 per 10,000, against 5·4; inmates of public lunatic asylums to 17·5, against 13·1; prisoners in prisons and bridewells to 6·3, against 6·9; and the inmates of other public institutions (exclusive of barracks) to 28·2, against 14·3. The greater part of the increase in the last-named group of institutions is owing to the extension of the industrial school system, the number of those establishments having increased from 33 to 57, and the number of pupils now amounting to 6,160, against 1,992 in 1871.

The remaining portion of the Report is occupied with statistics

of the religious profession and occupation of the people, which are beyond our province to deal with further than to state that the education of the people, while showing a vast improvement in the condition of things found by the Commission of 1871, is still far behind what should be met with in a civilised community. The state of ignorance of the peasantry in many parts of this country is of such a deplorable character that until this great bar of ignorance is removed but little social, moral, or hygienic improvement can take place.

The Report is illustrated by valuable maps and diagrams, which demonstrate at a glance many of the important conclusions to be derived from the tables appended to the work. Among these our readers will find one relating to the "sick," including many items of interest to our profession.

The Medical Digest. By RICHARD NEALE, M.D., Lond.; Member of the Dutch Medical Society of Batavia, Java. Second Edition. London: Ledger, Smith & Co. 1882. 8vo. Pp. 643.

THE first edition of this wonderful work of reference formed the seventy-fifth volume of the New Sydenham Society's publications, and was issued to the members of that Society in the year 1877.

The following extract from the author's Preface to the first edition conveys a clear idea of the scope of the "Digest":—

"It professes to afford a means of ready reference to such discoveries, new doctrines, and different modes of treatment in each department of medical science as are likely to be of interest to the practitioner. The sources of information which are here especially represented are—the *British and Foreign Medico-Chirurgical Review*, from 1848 to 1876 (1878); the *Lancet*, from 1837 to 1876 (1881); (the *British Medical Journal*, from 1877 to 1881; the *Practitioner*, from 1877 to 1881); the *Medical Times and Gazette*, from 1850 to 1876 (1881); (the *London Medical Record*, from 1877 to 1881); *Ranking's Abstract*, from 1845 to 1876; and *Braithwaite's Retrospect*, from 1874 to 1876 (1881). Week after week cases full of interest, observations of the greatest value, modes of treatment applicable to a variety of circumstances, are found in the pages of such publications. These are read and appreciated at the moment; but memory fails to recall them when urgently needed, and much valuable time is often lost in searching back numbers and wrong volumes for what, after all, will most probably be missed."

The present edition is brought down to the close of the year

1881, and it is contemplated to publish an Appendix every five years.

The value of the book is enhanced by a very copious Index which refers to all subjects under every variety of designation. This index, which is the key to the whole work, and should therefore in all cases be consulted first, contains nearly 10,000 references, while the book itself has probably over 120,000 entries. Dr. Neale admits that to bring the work to its present state has occupied on the average four hours per diem for thirty-five years. Such a statement is of itself sufficient to enlist our sympathies with the author, and claims our most attentive consideration.

Writing in this Journal, we have to express our regret that it is not included in the list of periodicals to which reference is made directly in the "Digest." This, however, is a minor point, and does not prevent us from frankly acknowledging the intrinsic value and great importance of this work of a lifetime.

The Sanitary Record and London Medical Record Diary for 1883.

Quarto. Pp. 152. London: Smith, Elder & Co. 1883.

WE have received a copy of this useful Diary, which is now published for the first time for presentation to subscribers to the two well-known monthly periodicals—the *Sanitary Record* and the *London Medical Record*.

The first part of the Diary contains an "Olla-Podrida" of useful information. We have a chapter on the therapeutics of the new remedies, such as jaborandi, citrate of caffein, hamamelis, hydrastis canadensis, picrotoxin, monobromide of camphor, oil of eucalyptus, resorcin, nitro-glycerine, chaulmoogra oil, &c. This is followed by another chapter on "Invalid Foods and Sick-room Appliances," a table showing the solvent power of glycerine, a saturation table, a chapter on the Urine, a list of poisons and their antidotes, hints for emergencies, including the treatment of those apparently drowned, tables of doses, medico-legal notes, a list of fees claimable by medical men in courts of law, a list of hospitals in London and of lunatic asylums in England, a chapter on Diplomas in Public Health or State Medicine, and a very full list of *English* and *Foreign* natural mineral waters.

The Diary itself is all that can be desired, but the blotting paper which interleaves it has been spoiled by printing advertisements upon it. After the Diary a great deal of information is given on

disinfectants and disinfection, as well as on the Acts of Parliament affecting sanitary interests, with the chief text-books on the subject, from which the "Manual of Public Health for Ireland" is omitted, although it is included in the curriculum for the Certificate in Sanitary Science in Cambridge University. We have also a list of foreign sanitary publications, tables on population, the duration of life, &c.; postal information and a schedule of stamp duties.

Despite a somewhat studied omission of exclusively Irish information, we may fairly congratulate the promoters and editors of the Diary on the measure of success they have attained.

An Index of Comparative Therapeutics, &c., &c. By SAMUEL O. L. POTTER, A.M., M.D.; President of the Milwaukee Academy of Medicine, &c. Second Edition. Chicago and London: Henry Kimpton. 1882. Pp. 279.

It would be difficult to say, from a perusal of this work, whether its author is a "homœopathic" or a "regular" physician. Probably he is one or the other as the occasion requires. He ridicules the efficacy of the so-called "high-potencies;" but seems to believe in the *similia similibus curantur* principle, and in the efficacy of "attenuated" medicines. The object aimed at by Dr. Potter is to show the therapeutics of the two great medical schools "for the use of all physicians." He adopts the plan of presenting an alphabetical arrangement of diseases and symptoms, with the remedies for each as recommended by "eminent and liberal teachers in the regular and homœopathic branches of the profession," arranged in parallel columns under their respective heads. The many drugs common to both schools are placed first in black type, and following them in Italics are the remedies peculiar to each school, with occasional short notes and references to authorities. Dose lists of regular and homœopathic medicines—among the former, many but little known in this country—are also furnished, together with numerous memoranda on a variety of subjects varying from ethics to enemata.

A book like this strengthens a widely-held opinion that many so-called homeopathic physicians treat their patients allopathically. Such men, while making use of established facts in medical science, claim the support of the public by professing to be followers of a principle in every sense opposed to that which they commonly adopt.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Washington : Government Printing Office. Volume III. 1882. 8vo. Pp. 1,020.

We have already^a expressed a high opinion of the first two volumes of this work. In presenting the third volume to General Joseph K. Barnes, Surgeon-General of the United States Army, the editor (Dr. J. S. Billings) observes that in it are included 9,043 titles of authors, representing 10,076 books and 7,386 pamphlets. It further includes 8,572 titles of the subjects of separate books and pamphlets, and 28,846 titles of articles in periodicals. Under the heading, "Collection of Portraits," are also catalogued 4,335 medical portraits.

The vast extent of the work may be inferred from the fact that the three volumes already published include 30,629 author-titles, representing 23,041 books and 23,594 pamphlets, while the subject-titles include 29,122 book-titles and 100,760 Journal articles ; and that the letter "D" in the alphabetical arrangement of the work is not exhausted in the third volume. At this rate the "Index-Catalogue" will run to fifteen or eighteen volumes before it is completed.

A Treatise on Human Physiology ; designed for the use of Students and Practitioners of Medicine. By JOHN C. DALTON, M.D. Seventh Edition. London : Churchill. 1882. 8vo. Pp. 722.

PROFESSOR DALTON'S well-known and deservedly appreciated work has long passed the stage at which it could be reviewed in the ordinary sense. We have only to record the appearance of a new edition, and to say that it fully sustains the high character which was enjoyed by its predecessors.

The work is, as stated in its title, eminently one for the medical practitioner, since it treats most fully of those branches of physiology which have a direct bearing on the diagnosis and treatment of disease, while those subjects which are of more purely scientific or theoretical interest are passed over lightly.

In the present edition important changes have been made, chiefly in the chapters on Animal Chemistry, the Nervous System, and Embryology. The work is one which we can highly recommend to all our readers.

^a Dublin Journal of Med. Science. Vol. LXXIII. Page 48. January, 1882.

PART III.

HALF-YEARLY REPORTS.

REPORT ON RHINOLOGY, LARYNGOLOGY, &c.

By KENDAL FRANKS, M.D., Dubl. ; Fellow of the Royal College of Surgeons ; Fellow of the Academy of Medicine of Ireland ; Surgeon to the Adelaide Hospital ; Surgeon to the Dublin Throat and Ear Hospital, &c.

NASAL POLYPI.

IN the *Archives of Laryngology* (April 1, 1882) Morell Mackenzie discusses the relative merits of the removal of nasal polypi by evulsion, abscission, and electric cautery. The primary question to be considered is of course which treatment effects the most complete cure—*i.e.*, effects the removal of the growth and is least frequently followed by recurrence. The subsidiary questions involved in the relative merits of the operation are—first, the amount of pain which each operation causes ; and secondly, the length of time required for carrying out each method.

1. *Evulsion by forceps* finds favour with the author, who considers that now that the “eye directs the hand” the use of blunt forceps is attended with little risk, and the evulsion of the growths is certainly less liable to be followed by recurrence than when simple abscission is practised either with the snare or cutting forceps. This method is certainly a very painful operation ; far more painful than either abscission or electric cautery. Hence he seldom practises it. The treatment is, however, undoubtedly a rapid one, probably more rapid than abscission with the cold snare, and certainly more rapid than when a case is treated solely by electric cautery. The objection which has been commonly raised against the method of evulsion—namely, the removal of a portion of one of the turbinated bones, is considered a special ground of recommendation by those who use these instruments. On the other hand, we have the opinion of many eminent specialists against the treatment of polypi of the nose by evulsion. Thus Voltolini says:—“In late years the use of the forceps has superseded all other instruments, and as the

result of its employment severe mutilations are frequently seen in the nose. Many distinguished surgeons admit that evulsion with forceps is one of the most brutal and disagreeable operations. . . . The forceps *blindly introduced* tear away or injure everything that comes in the way, whether it is healthy or diseased, soft or hard (turbinated bones, nasal septum)." Michel states that "as the result of operations by others with forceps he has seen luxation of the cartilaginous septum, fracture of the bones, removal of portions of the turbinated bones, circumstances which increase the sufferings of the patients and render the operation quite horrible." Zaufal, in recommending the snare, says that he hopes "to render utterly impossible in the future the obsolete barbarous forceps operation so unworthy of modern surgery."

2. *Abscission*, whether practised with the snare or cutting forceps, causes scarcely any pain. If, however, the growths are very numerous, it is difficult to effect as much at a single sitting with either of these instruments as can be accomplished with the blunt forceps.

3. *Electric Cautery*.—If a moderate sized hot point is inserted into a polypus it is scarcely felt, but if the base of a growth is adequately treated with the hot wire, considerable pain may be caused.

The mode of treatment generally adopted by Mackenzie is to remove the polypus with his punch forceps, and then to apply the electric cautery to the base of the growths. This method will generally succeed in effecting a rapid cure, but when recurrence repeatedly takes place, if the growth springs from one of the turbinated bones, he removes the portion of bone from which the polypus originates by means of a special instrument which he has devised for the purpose.

Voltolini (*Monatsschrift für Ohrenheilkunde*, No. I., 1882), in a case of polypi of the nose, where all other methods had failed, made use of the sponge in a way similar to that in which he has already applied it to polypi in the larynx. He relates in detail the history of his patient, and describes the method of proceeding—a method which had been originally recommended by Hippocrates for removing polypi from the nose. Voltolini tied a strong double thread to the middle of a small sponge, three centimetres long and two centimetres thick (about $1\cdot2 \times \cdot8$ inches). By means of a Belloc's sound he passed one of the threads through the nostril, and by forcibly pulling this thread he sponged out the nasal fossa; but as this

operation was not followed by any result he repeated it with a sponge double the size of the first one. The success was this time complete. According to Voltolini the only precaution to be taken is to make the sponge pass from the lower pharynx into the posterior nares as rapidly as possible by means of the fingers or of a pair of forceps. Thus pain, suffocative attacks, and especially laceration of the soft palate by means of the thread, are avoided.—*Revue Mensuelle de Laryngologie, &c.*, June, 1882.

M. Noguét (*Bulletin Médical du Nord*, March, 1882) reports two cases in which he removed numerous nasal polypi by means of Zaufal's snare, which he considers to be superior to all analagous instruments, and especially to that of Wilde. In both cases the ears had suffered severely from the nasal condition. In the first case he was obliged to have recourse to eleven *séances*, in which he removed successively seventy-nine polypi or pieces of polypi, varying in size from that of a nut to that of a pea, all being attached to the upper surfaces of the nasal fossæ. The purulent otorrhœa from which the patient suffered was completely cured. In the second case evulsion had failed, as did also the local application to the polypi of a saturated solution of bichromate of potash, as recommended by Frédéric de Gand. With Zaufal's snare he removed fifty-eight polypi and portions of polypi in thirteen *séances*. He prefers this instrument to the method of evulsion by forceps, as in this latter the turbinated bones and sometimes the cribriform plate of the ethmoid may be torn out, as illustrated in the cases of Lisfranc and Tillaux. Zaufal and M. Noguét reserve the galvano-caustic snare for large voluminous fibrous polypi. They prevent a reformation of polypi by cauterising the pedicles with a concentrated solution of chloride of zinc.—*Revue Mensuelle de Laryngologie*, July, 1882.

THE TREATMENT OF NASAL CATARRH.

When there is much discharge from the nasal passages Dr. Rumbold (*American Practitioner*, June, 1881) advises to cleanse them by means of the spray-producer. The solution he recommends is—

R	Acid. carbolic.,	gr. 1.
	Glycerini,	3 ij.
	Aquæ ad	3 ij.—M.

When the passages have been thus cleansed, he recommends to spray the nostrils with a small quantity of vaseline, melted in

the bowl of the spray-producer, and two to five minims of the following solution added :—

℞ Pinus canadensis, gr. 15.
Glycerini, ℥ ss.
Acid. carbolic., gr. ss.
Aquæ, ℥ iss.—M.

This is applied by the spray to every part.

SULPHATE OF ATROPIA IN THE TREATMENT OF CORYZA.

Dr. Gentilhomme recommends sulphate of atropia (from a quarter of a milligramme to one milligramme, given as a pill = ℥ ss. to ℥ ii. of the liquor atropiæ sulph. in coryza, which he says often arrests the progress of the disease. In the early stages it has often an immediate effect. It also produces great relief when the coryza is confirmed, but its action is less remarkable than at the beginning of the inflammation. When bronchitis exists at the same time, the sulphate produces an equally beneficial effect upon the bronchial mucous membrane. The employment of sulphate of atropia is based upon the fact that it has the power of lessening the nasal mucous secretion to the extent of complete arrest; and, at the same time, it acts beneficially upon the vessels by relieving their congestion.—*Rev. Méd. Française et Étrangère*, July, 1882.

HYPERTROPHY OF THE OSSEOUS STRUCTURES OF THE TURBINATED BODIES.

Dr. D. Bryson Delavan (*Archives of Laryngology*, Vol. III., July, 1882) believes that hypertrophy of the turbinated bodies, as he calls them, is not confined to the soft structures which cover the bones, but he maintains that “the turbinated bones (using this term in its literal sense) may, under proper conditions, undergo marked hypertrophy.”

In support of this proposition, he offers theoretical as well as practical reasons. Theoretically the process of hypertrophy in general may occur in almost any tissue of the body. In bone it is usually a secondary process, ensuing in consequence of change in a part with which some bone is intimately connected. The turbinated bones are not formed until a late period in the development of the fœtus. This tardy appearance would imply considerable activity of development later in the history of the child, and it is not impossible to believe that in some cases there should occur an actual overgrowth. Atrophy of the turbinated bones is generally

admitted ; and there is no part which being susceptible of one, is not also susceptible of the other. The probability of this is greatly increased when we recall the peculiarly intimate relation which exists between the mucous membrane of the turbinated body and the bone, through the medium of the membrana mucosa, which not only forms a fibrous network for the support of the blood vessels, &c., but actually passes into the periosteum. Any increase of the blood supply to the mucous membrane must have its influence on the subjacent bone. The conditions favourable to hypertrophy of the turbinated bone would seem to be—(1) unusual space in the nasal fossæ; (2) long continued hyperæmia of the structures investing the bone; (3) the existence of the above conditions during the period of greatest constructive activity. These conditions operate in a marked manner in deviation of the nasal septum, and in these the largest proportion of cases would appear. That this deviation is not the effect of turbinated hypertrophy, but its cause is shown, according to the author, by the facts that the hypertrophy is asymmetrical, and that the hypertrophied bone is almost invariably situated opposite the point of greatest concavity of the septum.

In a case which Dr. Delavan dissected he found—(1) there was well-marked deflection of the septum; (2) the side towards the concavity of the septum was completely occluded by the middle turbinated body; (3) upon removing the soft parts from the middle turbinated bone, the bone itself was found to be in a condition of unquestionable hypertrophy. The author examined the crania in the different museums in the States. He found in the collection of Prof. Hyrtl, in which the specimens were best preserved, that “in nearly every instance in which hypertrophy was observed, it was confined to the middle turbinated bone of the wider naris, which singular predilection can be explained only on the ground that, as this turbinated bone occupies the position directed toward the greatest concavity of the deflected septum, its opportunities for expansion during life are greater than those of its fellows.” The hypertrophy extended, as a rule, throughout the whole antero-posterior course of the bone in about the same relative degree. It had nothing about it whatever in the nature of an exostosis, but the bony plates were of the same relative thickness as in the normal organ, the whole resembling a natural turbinated bone magnified in size. The crania in this collection showed deflection of the septum in nearly 13 per cent. Over 60 per cent. of these

showed hypertrophy of the middle turbinated bone. In a number of cases, Dr. Delavan has demonstrated the presence of this bony hypertrophy in the living subject, by sounding, as it were, the enlarged mass with a fine needle; instead of entering the mass for some distance, it frequently impinged upon bone at a point comparatively near the surface.

The importance of these observations lies chiefly in regard to treatment. The methods generally employed have been to destroy the soft parts covering the bone, looking upon these as the factors in the obstruction; or else endeavour to restore breathing through the other nostril. Dr. Delavan's observations show that removal of the turbinated bone itself, entire or in part, is therefore essential. In support of the comparative harmlessness of this proceeding he quotes a recent remark of Morell Mackenzie, who says, "I have myself frequently removed portions of the turbinated bones without seeing any evil result follow, and it appears to me extremely doubtful whether any bad effect could result from the removal of a portion of one of them."

Subsequent to the removal of the turbinated bone, the author recommends that the deflected septum should be straightened.

Dr. Roberts, of Philadelphia (*Trans. Pennsylvania Med. Society*), in advocating the treatment of the nostril encroached upon by the deflected septum, recommends in mild cases to make a crucial incision through the septum at the point of greatest deflection, and to press the weakened cartilage away from the outer wall of the nostril. In severe cases he has devised a sharp cutting punch with which he cuts out a disc of cartilage. The opening left between the nostrils is no objection to the procedure, because it does not weaken the support of the nasal cartilages materially, and is not small enough to produce whistling sounds during respiration.

Dr. Ingals, of Chicago (*Archives of Laryngology*, Oct., 1882), discusses the causes of deflection of the septum narium, especially in those cases where there is "a degree of distortion sufficient to materially interfere with respiration, and to cause more or less deformity of the nose." He considers that the affection of the septum usually commences in the cartilaginous portion, and that the flexion of the vomer, which often exists, is of mechanical origin due to firm articulation of this bone with the cartilage. In spontaneous cases the principal changes appear to have been in the cartilage, increased growth from which has caused it to bend upon itself, but in some instances there is also considerable thickening of

the septum. The process generally depends upon congestion of the overlying mucous membrane. It is probably a simple hyperplasia of the cartilage cells due to hypernutrition, but it may possibly be of the rachitic nature.

The deformity usually commences at the middle or upper third of the septum, and passes from that point outward and downward nearly to the floor of the naris. It then bends sharply upon itself, forming a longitudinal ridge which stands out from the normal plane from three to eight millimetres. The ridge thus formed generally passes obliquely backwards and upwards, a distance of two or three centimetres in a line corresponding to the articulation of the vomer with the cartilage and nasal plate of the ethmoid. The most prominent part of the flexion is usually found about two millimetres below the normal position of the junction of the nasal cartilage with the vomer.

In cases of spontaneous origin, the process of flexion continues for a limited though uncertain time, but probably in most cases for at least two years. It finally comes to a stand still, and there seems no tendency to recurrence of the active increase in the size of the cartilage; neither is there likely to be any atrophy of it; but the deformity, unless relieved by an operation, will continue through life.

The most important operations recommended for the relief of this condition are—the one recommended by S. D. Gross, which consists in paring off a portion of the bent septum; the operation proposed by Mr. Adams, for forcible replacement of the bent and depressed septum; and Goodwillie's operation for perforating the septum. Ingals recommends another method in these cases of extreme deflection. He begins by plugging the posterior naris on the side to be operated on. The mucous membrane over the septum is then divided from above downwards and outwards, and then, with the handle of a scalpel or with delicately curved spuds, the membrane is separated from all that portion of the septum which is to be removed. A wedge-shaped piece of cartilage is then removed, taking care in cutting through it not to injure the mucous membrane on the opposite side. This wedge is so cut that when the cartilage is forcibly replaced in its normal position, the edges of divided cartilage should lie in apposition. The mucous membrane is then replaced and stitched and the nostril plugged so as to keep the cartilage in the new position. He recommends also cases where the vomer shares in the deformity, to include part of the vomer in the wedge, which can be done by means of a fine saw.

Dr. Jarvis, of New York, looks upon deviation of the septum as a prolific cause of nasal catarrh. He divides these deviations into localised and general. The localised form he considers is due more to a hypertrophied condition of the tissues over the septum than to any actual deformity in the shape of the cartilage itself, whilst the general form is due to a bending of the septum itself to one side, the overlying tissues being thickened. To cure these diseased conditions, he considers removal of the thickened and hypertrophied tissues sufficient. This he proposes to do by means of a wire snare constructed on a plan of his own. The parts to be removed are transfixed behind by his transfixing needle, and then, by tightening the wire of the snare, the redundant tissue is removed. This he considers far superior to all other methods, especially to those which cause perforation of the septum.—*Archives of Laryngology*, Oct., 1882.

SOME OF THE COMMONER AFFECTIONS OF THE TONSILS FROM A DIAGNOSTIC AND THERAPEUTIC STANDPOINT.

In a paper read before the New York Academy of Medicine, Professor G. M. Lefferts calls attention to the loose nomenclature of acute affections of the tonsils, all of them being called “quinsy and ulcerated sore throat.” As a matter of fact, the inflammatory conditions to be named, both in their causation, seat, symptomatology, and treatment, are as widely different as in like conditions elsewhere. Inflammation may attack either the parenchymatous tissue, or the secreting tissue of the tonsil, or the tissues about it. In the former case, if acute, it will proceed to the formation of true tonsillar abscess, or so-called quinsy, a comparatively rare condition. What is commonly reported as abscess of the tonsil is oftener an inflammation and suppuration at the base or in front of the gland. Verneuil has shown us that the tonsil does not adhere very firmly to the groove, if it may be so termed, which lies behind it; and that when tumefied by inflammation, it bulges out between the anterior and posterior pillars of the soft palate, and moves backwards and forwards with every movement of deglutition. This mobility, he asserts, is one of the principal causes of the formation of abscess. The gland being continually displaced, a serous bag forms, in the connective tissue, which stretches between both pillars of the fauces and occupies the bottom of the groove in which the tonsil lies. In this serous bag a purulent gathering is formed. Such an abscess is always deep-seated (and this is the one commonly met with in

practice), and cannot therefore, be easily reached with the knife. To incise such an abscess, it is necessary to cut through the anterior pillar of the fauces; for this pillar—enlarged, œdematous and protruding—forms the anterior wall of the abscess. The reason of failure at times to find pus, on incision of a fluctuating spot in this region is explained in this manner.

The swelling of the tissues puts upon the stretch the thyro-palatine and the pharyngo-palatine muscles; between the two is thus left a small triangular soft spot, palpation of which conveys to the finger, a decided sense of fluctuation. Dr. Lefferts dwells upon the frequency of follicular tonsillitis being classed as ulceration of the tonsil, the disease being in reality an inflammation of the membrane lining the crypts of the tonsil which are blocked up by a cheesy secretion. To prevent recurrence of the attacks of true tonsillitis, Dr. Lefferts recommends excision of the glands and constitutional treatment, which he thinks always indicated. For acute tonsillitis and peritonsillitis, he recommends steam inhalations and warm applications outside. Scarification of an inflamed tonsil often gives great relief, even if no abscess is reached. The nitrate of silver locally, and guaiac internally he thinks of doubtful value. Professor Lefferts dwells upon the great importance of excision of enlarged tonsils in children, that is, when the tonsil is much enlarged and indurated. He dwells upon the serious affections of the general health dependant upon such condition, which necessitates the breathing of a diminished supply of air, which has also become vitiated by the foul secretions of the tonsils.—(*Practitioner*, March, 1881, p. 218).

Dr. Armangué reports in the *Revue Thérapeutique* seven cases of tonsillitis cured in less than twenty-four hours by the bicarbonate of soda. This method of treatment was introduced by Dr. Giné, Professor of Clinical Surgery, who employed bicarbonate of soda locally either by insufflation, or directly applied by the finger of the patient. The application should be frequently repeated until the disease disappears. Dr. Giné relates dozens of cases in which a cure was accomplished in twenty-four hours, and has never seen this method fail to produce a good effect. The alleviation is almost always immediate, and is never long delayed. Its efficacy is especially marked in the prodromic period of tonsillitis, when it will invariably abort the disease. According to Dr. Giné bicarbonate of soda does not diminish the predisposition to anginas, but only arrests their development. Excision of the tonsils is a useless

operation (?) in cases of hypertrophy of the tonsils, since the hypertrophy can be rapidly removed by frequent applications of the salt of soda.—*L'Union Médicale de Canada*, Dec., 1881.

The Question of Hæmorrhage after Tonsillotomy.—Professor G. M. Lefferts thus summarises the forms of hæmorrhage which may occur after tonsillotomy: 1. A fatal hæmorrhage after the operation of tonsillotomy is very rare. 2. A dangerous hæmorrhage may occasionally occur. 3. A serious one, serious as regards both possible immediate and remote results, is not very unusual. 4. A moderate one, requiring direct pressure or strong astringents to check it, is commonly met with. But still in a large percentage of cases, certainly a majority, no trouble after the operation is experienced, the bleeding quickly ceasing either spontaneously or by the use of a little ice.

In discussing the first of these, the majority of cases of this accident which are upon record, contrary to what is generally supposed, do not concern the operation of tonsillotomy, but have occurred during an operation upon the tonsil, or in its neighbourhood, for other causes, such as the puncture of a retropharyngeal abscess, opening a pulsating tumour of the tonsil, opening of a supposed abscess, &c. Dr. Lefferts doubts very much whether in any of the reported cases where profuse hæmorrhage occurred after the removal of a portion, or of all the tonsil *with the knife*, and where the common carotid artery has been tied to check it, the source of hæmorrhage was the internal carotid. He thinks it much more probable that the vessels injured were the tonsillar branches of the ascending pharyngeal artery, or this artery itself. Thus far this form of hæmorrhage has never happened when the *tonsillotome* has been used.

2. A *dangerous* hæmorrhage is very uncommon. The author has met it in two cases among some 500 tonsillotomies. He found pressure completely arrested it in one case, while in the other it temporarily checked it, and was only finally stopped by looking for the bleeding vessel and twisting it. He also calls special attention to the fact that the hæmorrhage may not always be primary but may occur some time after the operation. Hence the patient should be kept under observation.

3. A *serious* hæmorrhage lies in the possibility of opening into a part of the rich venous plexus which lies at the bottom of the tonsillar fossa, and which may be easily wounded when the tonsil is removed entire, or from its peculiar position obliquely cut away.

This hæmorrhage is frequently secondary. Should a hæmorrhage persist or be of more than the usual moderate amount, and should it specially occur from the face of the cut tonsil, a differential diagnosis as to its source must be made. Usually it will be found in a single bleeding point, and can then be appropriately treated.

4. A *moderate* hæmorrhage—one requiring more than the ordinary means to control it—is not uncommon. The causes of it are chiefly two-fold:—First, when the tonsil is old, much indurated and hypertrophied, the nutrient vessels will be large; secondly, it is not uncommon for a small piece of the anterior pillar of the fauces to be cut off with the tonsillotome. The tissues immediately retract, and the small arterial twig which runs in the pillar is held open, giving rise to a persistent bleeding. This is also one of the commonest causes of *excessive* sore throat after the operation of tonsillotomy.—*Archives of Laryngology*, Vol. III., No. 1., p. 37.

TONSILLITIC DEAFNESS.

Enlargement of the tonsils is a frequent cause of deafness. Dr. Noguet recals that naso-pharyngeal catarrh and chronic coryza, intensified by narrowness of the nasal fossæ, are often found in patients the subjects of hypertrophied tonsils. As a general rule, when the tonsils are much enlarged the sense of hearing is more or less impaired. In some cases this is not found to be the case, but only in those where the hypertrophy is situated at the lower part of the tonsil, when the soft palate has not been encroached upon, and where naso-pharyngeal catarrh does not exist. Dr. Noguet gives the conclusions at which he has arrived.

1. Hypertrophied tonsils favour the production of naso-pharyngeal catarrh, and in all cases excite it and keep it up. This catarrh may obstruct the Eustachian tubes by concretion of mucus, by granulations, by swelling of the mucous membrane, and by causing an incomplete paralysis of the muscles of the velum of the palate. It may spread along the mucous membrane of the tube, which, consequently, gets thickened; it may spread into the tympanum, and give rise to chronic otitis media, which may even become purulent, with all its sequelæ.

2. Tonsils which are much developed in an upward direction, or from before backwards, prevent tension of the velum palati—consequently, the muscles which open the orifice of the Eustachian tube can no longer act, and the means of keeping up a proper air

tension within the tympanum is lost. Hence may result a cause of deafness independent even of a naso-pharyngeal catarrh.

Sometimes the tonsils may be so enlarged as to press directly on the orifices of the Eustachian tubes.

The prognosis in these cases varies with the existing conditions. In cases of simple hypertrophy, without any naso-pharyngeal catarrh, a cure will ordinarily follow on excision of the glands. In cases of Eustachian obstruction, improvement will be rapid in recent cases, but slight in old cases. M. Noguét advises, in all cases where there are any auditory complications, to have recourse to excision of the tonsils as early as possible, taking care not to operate during or immediately following on an acute attack of inflammation. It is always advisable to remove both tonsils, even when one of them is but slightly enlarged. This is the best means to prevent complications arising in the middle ear, which might become serious were the operation postponed. Constitutional and hygienic measures should always be adopted.—*Revue Mensuelle de Laryngologie, &c.*, June, 1882.

Dr. J. A. White, of Richmond, America, relates a case of a young lady who had suffered for three years from deafness, especially in the right ear. She also frequently suffered from suppurative tonsillitis. The right tonsil was considerably enlarged and hardened—the left very slightly so, and soft. The usual treatment was employed for the cure of the Eustachian catarrh from which she suffered, but without benefit, on the right side. At last the tonsil was excised, and the former treatment subsequently continued. In ten days the hearing became perfectly normal, and continued so unchanged for two years, when the case was reported. “This result,” says Dr. White, “could only be attributed to the excision of the tonsil, which kept up the Eustachian catarrh, and interfered directly with the faucial orifice of the tube by its upward growth. . . . In my experience I have found excision of hypertrophied tonsils, in cases of deafness, to be a matter of necessity, because even where they are not directly the cause of the impaired hearing, as in the above case, they are important factors in keeping up the throat and post nasal disease, which must always be gotten rid of to insure a good result in middle-ear or Eustachian tube diseases.”—*Archives of Laryngology*, Vol. III., No. 4, p. 359.

A NEW METHOD OF PRODUCING ANÆSTHESIA OF THE LARYNX.

Brown-Séguard recently read a communication before the *Académie des Sciences*, in which he detailed the following discoveries:—If, after having exposed the larynx in mammals, a very rapid current of carbonic acid is made to play upon it, at the end of a certain time, varying from fifteen seconds to two or three minutes, the exquisite sensibility of the laryngeal mucous membrane is found to be completely lost, and it is then possible to introduce a tube, or even a finger in a large dog, into the cavity of the larynx, and to move it about freely, without producing any reaction. This experiment, repeated with rabbits and dogs, has always given the same result.

Whenever irritation of the larynx is produced by means of a current of carbonic acid gas, or by the vapour of chloroform, a very brisk general agitation is observed over and above local reactions. On the contrary, when the larynx has been subjected to the influence of one or other of them for some minutes—but especially is this the case with carbonic acid—the irritative susceptibility of either one or the other is found to have become *nil*. This local anæsthesia (which is accompanied by an incomplete general anæsthesia) does not disappear for several minutes (two to eight) after the irritation of the larynx by means of carbonic acid has ceased.

Those animals which have been allowed to survive these experiments have shown no bad effects, either local or general, consequent on the use of carbonic acid, or on the mechanical irritation of the larynx or the trachea.

Experiments made by Brown-Séguard on himself in 1871 conclusively prove that a very rapid current of this gas may be made to play into the pharynx without producing dangerous results. It is important to extend these experiments, and Brown-Séguard has undertaken them with a view to producing anæsthesia in the laryngeal mucous membrane, in regard to its therapeutic application.—*France Médicale*, Oct. 3, 1882, No. 39.

Brown-Séguard reports further experiments on the subject of producing insensibility of the larynx by means of carbonic acid. It is not necessary to use pure carbonic acid; anæsthesia is equally produced by a mixture of oxygen and carbonic acid. Anæsthesia may be gradually produced by acting, little by little, on the buccal, pharyngeal, and laryngeal mucous membrane. Experience having

shown that it is possible, without incurring any risk, to inject fluids into the lungs of tracheotomised animals, if any sure means were known of rendering the larynx insensible, it results from the above fact that—in cases of pulmonary hæmorrhage, for example—a solution of ergotine could be directly injected into the lungs, after having anæsthetised the larynx by means of a current of carbonic acid. Hæmorrhage could be thus more quickly checked than by subcutaneous injections of ergotine.

Anæsthesia, produced by carbonic acid, be it local or general, disappears with an astonishing rapidity. If two tubes be introduced into the trachea of an animal, one into the superior portion of the trachea and one into the inferior, and if a current of carbonic acid is made to pass into the upper tube, respiration ceases. The animal, which has ceased to breathe, has red blood in the veins. There is no general anæsthesia. Carbonic acid directed on the larynx, produces only a local anæsthesia. Injected into the blood, it produces both local and general anæsthesia. — *Gazette des Hôpitaux*, Oct. 24, 1882, No. 123.

ENDOLARYNGEAL OPERATIONS FOR REMOVING GROWTHS FROM THE LARYNX.

Dr. Felix Semon records two cases of laryngeal growths which presented conditions which are generally considered as unsuitable for endolaryngeal treatment, but in both of which he succeeded in effecting a cure by this method. The first was a case of multiple-sessile, in part subglottic, papillomata, which he attempted to treat by evulsion. The growths recurred, but after each removal the power of reproduction became more sluggish, and he finally succeeded in completely clearing the supra-glottic portion of the larynx. The subglottic growths however were not amenable to this method of treatment, and he had recourse to the galvano-cautery. By using a fine point, bent at a right angle, the top of which only was of platinum, he cauterised the papillomata beneath the vocal cords repeatedly during several weeks. They gradually disappeared, and the patient almost completely recovered her voice. The growths did not recur.

The second case was one of a “large, hard, vascular fibroma, occupying the entire glottic space, springing from the anterior commissure of the vocal cords and the anterior third of the right vocal cord, and attached by a broad base.” Portions of this were removed by means of a galvano-cautery loop, and when sufficient

space for breathing purposes was procured an attempt was made to tear away the growth with forceps. The hæmorrhage which occurred after a fruitless attempt sent back the operator to the galvano-cautery loop. After several weeks he succeeded in ensnaring the whole remaining mass, which was rapidly burnt off with the heated wire. The operation was absolutely painless. The recent tumour measured more than half an inch in diameter and an inch and a quarter in circumference.

The author strongly advocates the endolaryngeal method of removing growths, even of the nature of those seen in his two cases, to the operation of thyrotomy—first, during the whole period of treatment the patient is able to follow his usual avocations; secondly, in thyrotomy the whole operation *must* be completed at one sitting; thirdly, in thyrotomy it is not always possible to completely remove all the growths; and fourthly, this extra laryngeal method is very liable to be followed by loss of voice, or to its lasting impairment. An investigation of the statistics on this subject, however, shows that “whilst thyrotomy was followed by a few more recurrences than cures the endolaryngeal method obtained twice as many cures as recurrences.”—*Medico-Chirurg. Trans.*, Vol. LXV. p. 163, 1882.

LARYNGITIS SICCA.

In the *Revue Mensuelle de Laryngologie, &c.*, Sept. 1882, Dr. E. J. Moure draws attention to a form of chronic laryngitis which bears a strong analogy to atrophic pharyngitis or pharyngitis sicca, of which it is only an extension into the larynx. This form which has been rarely described is generally depicted as a form of chronic catarrhal laryngitis, or of so-called glandular laryngitis. In this latter affection the expectoration is never abundant, and the mucus secreted in the larynx is of a greyish white colour, of viscid consistence, and firmly adherent to the surface of the mucous membrane. Very different, however, are the characteristics of laryngitis sicca. In the case described by Dr. Moure, laryngoscopic examination showed that the epiglottis, its folds, the mucous membrane covering the arytenoids, and the ventricular bands were free of all trace of lesion; but during phonation it was easily seen that the vocal cords could not be approximated, owing to a mass of viscid mucus of a greyish green colour which kept them apart on a level with their posterior portions. These mucosities corresponded exactly with the yellowish green layer of dried mucous which

covered the pharyngeal walls, and which extended up into the nasopharynx just as seen in cases of ozæna.

The symptoms which characterise this affection are not identical with those found in ordinary chronic laryngitis. We do not find, as in this latter, an irritable condition of the throat, a wearing cough, a constant hoarseness, sometimes followed by complete aphonia and by pinching sensations in the larynx if the patient exert his voice for a length of time; on the contrary, in this dry form we find that the voice, though for the most part uniformly hoarse, may sometimes become quite clear if the patient succeed in clearing his throat of the obstacle which prevented his speaking.

It is very rare to find *complete* and *persistent* aphonia in simple catarrhal laryngitis, whilst this symptom may exist in atrophic laryngitis.

The objective signs of laryngitis sicca are no less remarkable. Unlike ordinary laryngitis, in which many lesions are found occupying the greater part of the vocal organs, in this form the whole infundibulum of the larynx may have a perfectly normal aspect. We observe, however, small pledgets of dried mucus between the vocal cords or the ventricular bands, or attached to the inter-arytenoid fold, of a greyish green colour. When the layer is very thin it gives the appearance as if the subjacent tissues were varnished. When these pledgets are removed with a brush or cotton wool the vocal cords may be found perfectly white and normal, although sometimes they may be somewhat reddened.

Lastly, atrophic laryngitis is always accompanied by the same condition in the pharynx.

The treatment recommended by Dr. Moure is the local application of chloride of zinc (15 grs. to ʒj) and the general administration of sulphurous waters, or small doses of iodide of potassium where these fail.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. BANKS, M.D.

General Secretary—W. THOMSON, M.D.

OBSTETRICAL SECTION.

President—JOHN DENHAM, M.D.

Sectional Secretary—WILLIAM C. NEVILLE, M.D.

Friday, December 22, 1882.

The PRESIDENT in the Chair.

Opening Address.

DR. DENHAM, after some preliminary observations, took for the subject of his inaugural address "The Progress made in Obstetric Medicine during the last fifty years," selecting as the basis of his remarks a comparison of the Rotunda Hospital Reports of Drs. Collins and Shackleton with those recently published by Dr. George Johnston. Dr. Collins during his seven years Mastership had 16,414 deliveries, in which the crotchet was used 118 times and the forceps or vectis 27 times. The number of deaths amounted to 164. Dr. Shackleton reported 13,748 deliveries, with the use of the perforator in 130 cases and of the forceps in 200 cases, and the loss of 163 patients. Dr. Johnston reported 8,908 deliveries; 28 craniotomy, 90 version, and 750 forceps cases. He lost altogether 169 patients. Commenting on these figures Dr. Denham observed that it was patent that by the more frequent use of the forceps in modern obstetrics much had been done for relief, without adding to the dangers of labour, and that great numbers of children were now delivered alive who under the old practice would have had to be destroyed. The beneficial results of the introduction of chloroform, the greater use of sea-tangle tents, the operation of ovariectomy, followed as it has been by so many new operative procedures, were briefly alluded to as having done much to bring gynæcologists into the front ranks of bold and successful operators, and to break down the barrier which at one time existed between this and other branches of the profession.

Exhibits.—1. Recent Spontaneous Detachment with Rent in the Substance of the Retina.

MR. ARTHUR BENSON exhibited a male patient showing a well-marked example of the above condition.

2. Acute Pericarditis following on an attack of Acute Articular Rheumatism.

DR. G. F. DUFFEY showed the heart and pericardium of a male patient, aged fifty, exhibiting the recent pathological effects of an acute pericarditis which had lasted only for about eighteen hours.

3. Frozen Sections through a Full-time Stillborn Fœtus.

DR. ROE exhibited a series of these frozen sections which he had lately made—(1) Section through medial horizontal plane of foetal head; (2) section through the shoulder-joint and upper part of the chest; (3) section through the level of the third costal cartilage.

4. Double Ovarian Dermoid Cysts.

DR. POOLE showed, for Dr. Kidd, two dermoid ovarian cysts removed from an unmarried patient, aged thirty-eight. Growth of tumour noticed for three years. The larger tumour involved the left ovary, and weighed on removal about 6 lbs. It is composed of numerous loculi of various sizes, some containing glary mucoid fluid, and others masses of sebaceous matter mixed with hairs. Hard centres of ossification were felt in portion of cyst walls; one of the larger cysts contained a matted mass of long dark hairs, on removing which a mass of bone was found jutting sharply into the cavity and bearing on its apex two closely-united teeth. The smaller tumour belonged to the right ovary, and is seen to consist of two cavities, one containing sebaceous matter with a few hairs, and in one part of its walls a mass of bone; the other containing a quantity of light-coloured hair and several teeth irregularly set in a bony wall.

MR. P. S. ABRAHAM showed under the microscope preparations from above cysts, illustrating their contents and different portions of their walls.

5. Fæto-amniotic Adhesions, associated with numerous Deformities of a Full-time Fœtus, including complete Ectopia of the Abdominal Viscera.

DR. NEVILLE exhibited this specimen, and with it a four-months' fœtus, around whose right forearm the funis had become looped and adherent, associated with deformities of both hands, &c.

Papers.—1. Cicatricial Occlusion of the Vagina.

DR. MORE MADDEN said: At present our clinical experience of retained menstruation or impeded parturition, consequent on *post partum* adhesions of the vaginal walls, is fortunately more limited than must have been the case in the practice of our predecessors, when the second stage of labour was frequently allowed to run on for twelve or even twenty-four hours, and when instrumental assistance was directed by

the most eminent authorities to be withheld until the vital powers were all but exhausted. Still such cases are occasionally met with. Of somewhat greater frequency in the causation of this condition in modern practice is the opposite error of premature application of the forceps before the natural dilatation of the passage, or by the misdirected force or undue haste with which instrumental extraction may be effected.

Another source of such occlusion is the abuse of escharotics for the treatment of uterine disease.

Apart from these causes, the occurrence of vaginal occlusion after parturition is exceptional. The following are notes of a case of this kind which recently came under my care in the gynæcological ward of the Mater Misericordiæ Hospital :—The patient, aged thirty-eight, had been several years married, and had given birth to four children. She never had any difficulty in parturition, and her recoveries were always rapid. Six months before admission she had a miscarriage on the fourth month. This was caused by over-exertion, and presented nothing peculiar. Up to this time her general and uterine health had been excellent. Two months after miscarrying she began to complain of obscure pelvic pain, with sense of local fulness and bearing down. Her menses did not return, and as she had previously been very regular in this respect, she naturally supposed herself to be again pregnant. The pelvic pain increasing, however, and being now attended with dysuria, troublesome tenesmus, and obvious impairment of her general health, she sought medical advice. When admitted into hospital, her general symptoms and history suggested retroversion of the gravid uterus.

On examination this was found not to be the case. The pelvic cavity was filled by a large globular tumour, which extended backwards so as to flatten the rectum against the sacrum, and upwards and forwards so as to displace the bladder. The entrance to the vagina was thus obstructed, so that the finger could be passed in only for an inch and a quarter. On bi-manual recto-abdominal exploration, the uterus was found enlarged to the size of the fourth month, but in its normal position. The patient was then placed in lithotomy position, the parts widely separated by retractors, and the seat of the obstruction, which was seen to consist of a tense, convex, fibrous-looking septum, thus fully exposed to view. This diaphragmatic-looking cicatricial structure was then punctured with a fine trocar, and a small quantity of retained menstrual fluid drawn off by the aspirator. As the fluid was too viscid to pass freely through the canula, the aperture was enlarged so as to admit the point of the finger, with which it was torn through so as to allow the gradual escape of about eighteen ounces of thick, treacle-like, catamenial matter. For two days afterwards this continued to drain away, and probably as much more escaped in this way.

The membranous partition described formed the floor of a large hour-

glass-shaped cavity, the lower part of which was bounded by the distended vaginal walls, communicating through the open os and expanded cervical canal with the dilated uterine cavity which formed its upper and smaller portion.

On the day following the operation she had rigors, her pulse and temperature ran up, the abdomen became tympanitic, there was considerable uterine pain and tenderness, and for the ensuing week her life hung in the balance from severe metro-peritonitis. This, however, ultimately subsided under treatment. The opening was then cautiously and gradually expanded by dilators, and kept patulous by glycerine tampons until all trace of constriction had disappeared. She was retained under observation until the next monthly period, which was perfectly normal, had passed over, and being then well, was discharged from hospital.

The foregoing instance of vaginal occlusion in a patient who had given birth to several children, and without any previous history of the usual causes of this condition, is interesting from the infrequency of such cases, and from the possibility of such an occurrence being an occasional cause of menstrual retention or an obstacle to impregnation or parturition. Moreover, it illustrates the danger attending the treatment of such cases, in proof of which the writer adduces the conclusion, from the observations of the principal authorities on the subject, that the treatment of cicatricial vaginal obstruction is by no means as safe as it is facile. And that the safest instrument in the removal of these adhesions is the surgeon's finger—the mortality following the use of any cutting instrument being nearly threefold that resulting from their digital separation.

DR. ATTHILL said that the case was unique in his experience. He did not think that the occlusion could have resulted so completely from any abuse of caustics. It was probably due to the occurrence of adhesive inflammation, such as he had seen result in a like way in the case of women who had never been pregnant.

DR. KIDD narrated the history of a case recorded by the late Dr. Sawyer, in which a cicatricial occlusion of the vagina was found as an impediment to labour at the end of her second and third pregnancies—the occlusion having on each occasion to be opened up by crucial incisions. He insisted on the impossibility of negating the coexistence of pregnancy with almost any amount of occlusion, illustrating this point by the details of many cases which had fallen under his own observation. It was often very difficult to say whether the occlusion had taken place before or after conception. Dr. M'Clintock had described a form of annular contraction due to atrophy of the vaginal walls in aged women. He (Dr. Kidd) had seen cases of a like kind in much younger women. Possibly, in Dr. Madden's case, an annular contraction of such a kind had formed, proceeding to such an extent as to form an "impermeable stricture," thus giving rise to the occlusion.

DR. J. A. BYRNE did not think Dr. Kidd's explanation held in Dr. Madden's case. Atrophic contraction was limited to older women. Strong escharotics injudiciously applied were, he thought, among the most frequent causes of vaginal or cervical occlusion. When retention of the menses resulted, they should be let out slowly and cautiously.

The PRESIDENT thought that conception might occur in spite of very considerable occlusion. Occlusion did not seem to be so frequently met with now as when the forceps was less often and more tardily used.

DR. MORE MADDEN briefly replied.

2. *Breaking Strain, or Tensile Strength of the Umbilical Cord.*

DR. NEVILLE read a paper on this subject, founded upon 125 experiments made by him on the fresh cords of full-time children. Having explained the method of making these experiments, in which only the 12–14 inches of the cord nearest to the placenta were tested, he stated his conclusions as follow:—

In 100 cords from which the blood had been allowed in great part to escape before subjecting them to strain, the average tensile strength amounted to 12·5 lbs.; one cord bore a strain of 27 lbs.; nine cords a strain varying from 20 to 25 lbs.; eighteen of from 15 to 20 lbs.; forty-eight of from 10 to 15 lbs.; twenty-three of from 5 to 10 lbs.; and one of less than 5 lbs. In the case of 25 cords tested without allowing any escape of the blood contained in them, the average breaking strain was found to be very little above 11 lbs., or nearly one and a half pounds less than in the other case. The cords belonging to males were found to have an average strength of 1·5 lbs. more than those of female children; multiparity made no appreciable difference in strength. The strain was always gradually increased until the cord broke; and rupture was most commonly found to be first marked on the outer aspect of the cord where an umbilical vein projected in a varicose manner. Thin, straight, and wiry cords, possessing a comparatively small amount of Whartonian jelly, and whose surfaces were least marked by varicose projections, habitually bore the greatest strains.

The rather scanty literature on the subject was summarised; especially a paper by Pfannkuch (A. f. G. Band. VII., Heft. 1), who studied the effects of a sudden strain caused by the falling of the child's body, if delivered when the woman was in the upright position. Dr. Neville considered the question of a gradual drag as affecting inversion of the uterus. Assuming as conditions a strong funis abutting at or near the centre of the fundus on a firmly adherent placenta, and a flaccid pliable uterus wanting in contraction and retraction, he thought improper tractions on the cord very likely to terminate in inversion. Inversion is a rare accident, because these conditions are rarely met with in combination, and because real fundal attachment of the placenta is

particularly uncommon, notwithstanding text-book statements to the contrary.

DR. MACAN considered that there could be no doubt that inversion might readily be effected by pulling on the cord under the circumstances laid down in the paper. He would lay special stress on the fact that traction, in order to result in this way, should be made at right angles to the uterine wall at the site of placental attachment. This only could happen when the placenta had a fundal attachment.

DR. ATTHILL compared inversion as an accident of delivery with that which resulted from an intra-uterine tumour. In the one case he believed that, as a matter of personal observation, the tumour, and in the other case the placenta, would always be found attached to the fundus. The fundus was the part of the uterus most susceptible of irritation. Irritation would set up contractions, and these would expel either the tumour or placenta, and along with either might invert the uterus. Pulling on the cord might facilitate the inversion, but could not act as a sole cause of this accident.

DR. KIRKPATRICK also spoke.

DR. NEVILLE did not reply.

3. Mummification of one Fœtus in a Twin Pregnancy ; Labour at Term.

DR. J. R. KIRKPATRICK exhibited a specimen of a mummified fœtus, with the placenta and membranes belonging to both children of a pregnancy which had gone to full time. There was a single placenta, and double membranous sac; that portion of the placenta which belonged to the mummified fœtus being shrunken and degenerated. The fœtus appeared to have died about the sixth month, and to have been since retained without occasioning any pathological symptoms. It was first born, after which the other child presenting by the shoulder was turned and born alive and healthy. The living child, a female, weighed 8 lbs. The placenta was quickly afterwards naturally expelled. The mother was a healthy multipara, aged thirty-three years, her six previous labours having terminated normally.

The Section then adjourned.

PATHOLOGICAL SECTION.

President—J. M. PURSER. M.D.

Sectional Secretary—E. H. BENNETT, M.D.

Friday, January 5, 1883.

The PRESIDENT in the Chair.

Specimens Exhibited by Card.

DR. F. HEUSTON exhibited an oval dermoid tumour of the right ovary, the circumference being 10 inches and the diameter 9. He had removed it from the body of a dissecting-room subject, aged sixty-five. The tumour was connected by adhesions with the surrounding viscera. Microscopic sections of the wall of cyst showed bony plates and nodules of cartilage. A fibroma existed in the upper and posterior portion of the vagina.

MR. ARTHUR BENSON exhibited drawings of two cases of rupture of the chorioid from external injury. Case I. From the left eye of a man, aged thirty-three, who received the injury three weeks before admission to St. Mark's Ophthalmic Hospital by a fall from a horse. The rent in the chorioid was seen to occupy a space midway between the disc and the yellow spot, and was crescentic in form, its concavity being directed towards the disc. The rent was marked by a considerable accumulation of pigment. The retinal vessels ran over it without any alteration in their curvature or direction. The pigmentation occurred six or seven weeks after the accident, and was not the remains of hæmorrhage. Case II. From a girl, aged nineteen, who had six months before admission received a blow from a portion of an exploding coffee-pot. There were three separate rents in the chorioid—one at the yellow spot, the second a small crescent above the disc, and the third a large irregular rent above the last and near the periphery.

MR. J. S. M'ARDLE exhibited tumours of the cerebellum removed from a child ten years old, who three days after a fall on his head was admitted into St. Vincent's Hospital with all the symptoms of cerebro-spinal meningitis. Sections of the tumour, prepared by Mr. P. S. Abraham, showed giant cells with caseation of the central parts of the tubercular mass.

MR. M'ARDLE also exhibited a toe with fibroid tumour attached. The tumour was painless and slow of growth until within a month of its removal. A short time before admission into St. Vincent's Hospital caustics had been applied with the effect of increasing the size and altering the surface of the tumour, as well as rendering it painful.

MR. M'ARDLE likewise exhibited a specimen of thickening of the nasal septum removed from a patient who died of inflammation of the lungs, and in whom the nasal passages were almost occluded by thickening of the mucous membrane over the turbinated bones and septum.

MR. ANTHONY H. CORLEY exhibited a specimen of extra-capsular fracture of the neck of the femur. The patient was over eighty years of age. It was not quite certain whether the fracture was caused by a blow or a fall, as it was stated that she was struck with a poker and fell in consequence. She lived three weeks after the accident, and had more power than usual in turning in bed. There were no signs of severe contusion. She suffered from bronchitis and emphysema, and died rather suddenly. The fracture was comminuted, the great trochanter being split vertically.

Communications.—Cirrhosis of the Lung.

DR. J. MAGEE FINNY exhibited a specimen of cirrhosis or fibroid induration of the upper lobe of the right lung, in which the disease was strictly limited to that lobe and had caused it to be converted into a series of cysts varying in size from a pea to a small marble. There was a complete absence of the normal alveolar tissue, which was replaced by dense fibro-cellular tissue of a greyish-red colour. The cysts, which, as a rule, did not communicate with each other, contained a yellow mucopurulent secretion (free from special fœtor), and were lined with a mucous membrane continuous with that of the bronchi. They permeated the entire lobe, giving it a very peculiar honeycomb appearance. The bronchi were slightly dilated in their tertiary division. It seemed as though the alveolar tissue alone, to the almost total exclusion of the pleura and to a partial exclusion of the bronchi, was the seat of the fibroid change. No other exactly similar case has been observed, and while the lines of demarcation between bronchiectasis and the cirrhosis of Corrigan are by no means so marked as some recent writers (including Juergensen in Vol. IX. of Ziemssen's Cyclop.) would imply, it was plain that in this specimen the bronchial dilatation had little, if anything, to say to the condition of the lobe. The pleura of the right lung was thickened and adherent to a very slight degree, and sent no fibroid prolongations into the substance of the lung. The patient, a boy aged seventeen, was under observation for but a week, having been admitted to Sir Patrick Dun's Hospital on December 21, 1882, for a supposed attack of pneumonia of the upper lobe. On the 28th of December physical examination showed the presence of what was thought to be a multiple abscess of that lobe and pleural effusion of a latent type of the left side to the level of the sixth rib. In the course of the case, two days before death, the pleuritic friction was heard as high as the fourth rib. Over a limited extent occupying the third and fourth costo-sternal articulations a double friction-sound, synchronous with the impulse of the heart and

increased by pressure, was readily made out and heard by several observers. It was thought to be of pericardial origin, the inflammation being secondary to extension from the pleura. The *post mortem* examination showed that there was no pericarditis, and that its real cause was the impact of the heart against the pleura, which was roughened and granular in its narrow prolongation under the sternum. Dr. Finny noticed the rarity and commented on the clinical significance of this physical sign. The cause of death was syncope, due to the sudden out-pouring of fluid into the left pleura and the incautious sitting-up of the patient. On the evening before his death the respirations were 28, pulse 120, temperature 102°, and there were no signs of any asphyxia; the patient was resting easily on the right side, and expressed himself easier and better than he had been since admission, and during the day the fluid had not reached above the fifth rib in the semi-recumbent position, and there were no symptoms suggesting, not to say demanding, mechanical relief. At 3 o'clock a.m. on the 29th he sat up to cough, as he was in the habit of doing on waking out of sleep, and whilst taking nourishment and conversing with the night nurse he was noticed suddenly to become pale and to be bathed in perspiration. He died in an hour. Effusion of a very rapid nature and to a very considerable extent must have occurred during that night, as the pleural cavity was found full of fibrino-serum and the lung compressed, without enlargement of the side or bulging of the intercostals. Trousseau's and Bartel's notice of the possibility of sudden death in pleurisy and their explanations of it as being by syncope were detailed, Dr. Finny laying more stress upon the rapidity with which the effusion is poured out than on the amount.

Double Glioma Retinæ.

MR. SWANZY read a paper on double glioma retinæ, illustrated by a living specimen. The patient was aged two and a half years. His mother first noticed a peculiar appearance in the interior of the right eye twelve months ago, and four months later in the left eye. At the first visit to the National Eye and Ear Infirmary six weeks ago, a growth was found in each eye of a pale yellow colour. In the right eye it lay deep on the posterior surface of the globe; in the left eye it came most to the front, occupying two-thirds of the vitreous humour, and presented a lobulated surface. The vitreous humour in each eye was clear. There had been no iritis or other inflammatory process, and there was no injection of the anterior parts of the eyeballs. There were not, and had not been, any head symptoms, and in all respects the patient's general health was perfect. He had never had any illness. The only changes since the case has been under observation are a slight increase in the size of the growths, and that the right eye has become glaucomatous. However, the child, who spoke remarkably well for his age, has lately

spoken sometimes very indistinctly and with much rapidity, and a forced repetition of the final letter of some words—thus, “Bread-d-d-d-d.”

Intra-ocular Tumour.

Mr. SWANZY also read a paper on a case of intra-ocular tumour, (illustrated by microscopical sections prepared by Mr. P. S. Abraham). The growth had commenced six years ago, and when removed was, with the eyeball, the size of a hen’s egg. It was still covered in front by conjunctiva and atrophied sclerotic, but had grown through the sclerotic above and displaced the eyeball downwards. The greater portion of the tumour was found to consist of a melanotic sarcoma, with round and spindle cells in the usual arrangement. Around the optic nerve behind the globe there was a considerable mass of tumour containing less pigment, and in it there was an alveolar arrangement corresponding to Billroth’s alveolar sarcoma. At one part of the highly pigmented portion, where it came in proximity to the conjunctiva, there were well-marked alveoli containing epithelial cells, thus so far placing the tumour in the category of carcinomatous sarcomata described by Virchow.

The Section then adjourned.

MEDICAL SECTION.

President—WILLIAM MOORE, M.D., President K.Q.C.P.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, January 19, 1883.

The PRESIDENT in the Chair.

Living Specimens.

MR. A. H. BENSON exhibited a case of hard chancre on the upper eyelid; and DR. J. MAGEE FINNY, a peculiar case of vesiculo-tubercular disease of the skin of eighteen years’ standing.

Specimens Exhibited by Card.

DR. A. W. FOOT exhibited drawings of facial chromidrosis; DR. H. KENNEDY, urinary calculus; DR. C. J. NIXON, aneurism of the arch of the aorta obliterating the arteria innominata; DR. H. C. TWEEDY, heart showing vegetations on the mitral and aortic valves; and DR. F. J. B. QUINLAN, (1) bacillus of tubercle in sputum, and (2) bacillus of tubercle in lung-tissue.

Communications.—Empyema, with Notes on Antiseptic Fluids and Drainage-tubes.

DR. RICHARD A. HAYES first read a paper on a case of empyema treated by the radical method, with notes on some antiseptic fluids employed. After some observations pointing out especially the great danger of producing general anæsthesia in cases of intended operation on large fluid effusions in the thoracic cavities, he mentioned the particulars of the case. A man, aged twenty-two, was the subject of right empyema of eighteen months' standing, with severe hectic and wasting. On his admission to Steevens' Hospital, the pus was thrice removed by aspiration, and the cavity washed out with carbolic solution, without effecting a cure. An intercostal incision was then made, and a large canula introduced—the pus draining away into pads of oakum placed over the opening, and the cavity washed out daily with antiseptic solution by means of an elastic catheter. The case progressed favourably, with the exception of a few complicating circumstances, and the patient was ultimately discharged, and went to the country—a sinus only remaining unhealed. During the treatment of the case the following washes were used:—1 per cent. oil of eucalyptus; grs. 2–3 i., or less than $\frac{1}{2}$ per cent. carbolic acid; 2 per cent. boracic acid; and 1 per cent. salicylic acid. A careful record of the morning and evening temperatures having been kept, the results obtained from the use of the different antiseptics were as follow:—Oil of eucalyptus (1 per cent.), morning temperature, 98·8° F.; evening temperature, 100·4° F. Salicylic acid (1 per cent.), morning temperature, 98·3° F.; evening temperature, 99·5° F. Boracic acid (2 per cent.), morning temperature, 98·2° F.; evening temperature, 99·4° F. Carbolic acid ($\frac{1}{2}$ per cent.), morning temperature, 97·8° F.; evening temperature, 98·7° F. The foregoing temperatures are averages, the periods of observation being carefully selected, so as to be free from complicating influences which might affect the fever curve. During the entire of the later stages of the case, carbolic acid wash was used, and the temperatures were uniformly identical with the result of observations in the early stages. The results, therefore, show a marked advantage as regards the hectic obtained by the use of an exceedingly dilute solution of carbolic acid. That the carbolic acid had this distinct effect was proved by a trial irrigation of pure water, an evening temperature of 100° F. following its use.

DR. PURSER then described a case of left empyema. The patient was a ship's steward, aged thirty. The disease was at first latent, but after nine months he was admitted into hospital, when he was tapped, and subsequently a drainage tube inserted. His condition continued satisfactory for some months, when severe fever supervened—at first of a hectic character, but soon becoming continuous. Death ensued about three weeks from the commencement of the febrile symptoms. The

compressed lung was found to contain air, and to have maintained its vesicular structure unimpaired. The cavity of the left pleura was much diminished. There were three wedge-shaped embolic patches in the spleen, which were softened and purulent. There were no other evidences of pyæmia. Prof. Purser directed attention (1) to the prolonged latency of the disease and to the slight distress, notwithstanding the compression of the lung and the displacement of the heart, which beat in the right axilla; (2) the advantages and disadvantages of different kinds of drainage tubes in facilitating discharge and preventing putrefaction; (3) the aseptic fever, in the sense of Volkmann and Genzmer, from which the patient suffered at intervals, as contrasted with the septic fever from which he died; and (4) the apparently slight injury done to the lung by the prolonged compression from the effusion.

DR. BENNETT called attention to the risk of injecting the pleural cavity at an early stage when fever and dyspnœa were present. He advocated a local anæsthetic and use of the spray in the radical treatment of empyema.

DR. FINNY corroborated Dr. Purser's statement as to the entire absence of fetidity of the discharge during the time the patient was under his care as well as at the *post mortem* examination. Three weeks before death—the initial period of the fever—much pain was complained of in the left hypochondrium, and marked the occurrence of the embolic infarctions of the spleen. Fetidity of the pus was not induced by the use of a simple rubber tube unprotected by any antiseptic; and it was a question for consideration if a period did not arise in the course of such cases when antiseptics might with safety be dispensed with.

DR. C. J. NIXON advocated tapping in cases of empyema, instead of at once employing the radical treatment. He detailed a case in which the latter operation was performed without the spray; and as the fluid next day became fetid he washed out the cavity with good results.

DR. W. G. SMITH disputed Dr. Hayes' conclusions as to the advisability of washing out the pleura with antiseptics, basing his opinion on the ground that the periods of trial by Dr. Hayes were too short, and that fluctuations of temperature in cases of empyema were common.

MR. E. HAMILTON corroborated Dr. Hayes' view on the advantage of washing out the pleura with carbolic lotion, and referred to the vicarious expectoration of pus in cases of empyema described by the late Dr. Green.

DR. HAYES (in reply) said he was fully cognisant of the danger of using injections, but that the object he had in view was to bring about a healthy condition of the pus-secreting pleura, and that the lowering of the temperature in his case was directly due to the use of carbolic acid.

DR. PURSER (in reply) considered that the only circumstance which justified washing-out the pleura was that the discharge was fetid, and continued fetid for some time.

The Section then adjourned.

CLINICAL LECTURES ON DISEASES OF THE LOWER BOWEL.

By EDWARD HAMILTON, F.R.C.S.I.; Surgeon to Steevens' Hospital.

GENTLEMEN,—I purpose devoting that portion of the clinical course which devolves on me this session to the study of Diseases of the Lower Bowel. We have abundant opportunity of observing them in the wards and at the dispensary; our old case books also are a rich mine of pathological wealth, abounding in valuable records on the subject. These diseases are modified by complexity of anatomical structure, close connexion with highly sensitive organs, and by functions of a peculiar nature so essential to comfort and health. Moreover, feelings of delicacy on the part of our patients cause such maladies to be too frequently concealed from their friends, and even from their ordinary medical attendants, until they have made considerable progress, and have manifested themselves by their influence upon the system at large; for the effect upon the health produced by them is out of all proportion to the amount of actual pathological change. The careless and routine practitioner is very apt to prescribe for such cases day after day without making a physical examination, by which alone the existence and nature of such ailments can be satisfactorily determined; and, indeed, we often experience much difficulty and opposition, and it requires much persuasion to induce nervous individuals to submit to the necessary ordeal; we have, however, a powerful adjunct in the employment of anæsthetics. They, at the same time, neutralise the patient's repugnance, and enable us to carry out our investigation in a thoroughly complete and exhaustive manner. I have no hesitation in saying that they have done more for the rational and scientific treatment of rectal diseases than for any other department of surgery.

I trust we may be able to draw some useful knowledge from the study of these diseases, for we must ever remember that we are all students in this great hospital. Whether we are pupils or surgeons we have all much to learn, and I cannot too strongly impress on you the value of honest thoroughness and punctuality in your clinical work. The day when you are absent from the wards unusual symptoms may be developed in the cases under treatment, or fresh patients be admitted with conditions which you may seldom, if ever, have an opportunity of observing again, until they arise in their nemesis to confront and puzzle you in your own practice.

Before we enter into strictly surgical details I will ask you to bear

with one who, having spent a large portion of his life in teaching anatomy, still maintains the almost obsolete idea that the practice of surgery can have no other sure foundation than a sound knowledge of that important science, a knowledge derived by actual work with the knife and forceps. I would, therefore, beg to task your patience by stating a few facts of the anatomy of the rectum. They may, perhaps, be tiresome to many of you, to some they may be new. This portion of the large intestine has been called rectum—straight gut—because in most quadrupeds, from which alone the early fathers derived their anatomy, it is so. The term *curvum*, suggested by Lisfranc, is more applicable to the human bowel, but we cannot change a name so hallowed by antiquity. Passing from the termination of the sigmoid flexure of the colon at the left sacro-iliac synchondrosis it descends to the right side, in order to gain the middle of the sacrum in front of which it lies adapted to its concavity, and consequently presenting a second curve; it now turns rather sharply backwards to terminate in the anus. This latter direction should be carefully attended to in the first step of introducing an instrument into the bowel. The close contact between the intestine and the great sacral nerves as they emerge from their foramina will explain the remote extent of some of its sympathies, as pain in the foot, the “plantar neuralgia of Chaussier,” and we can easily understand how a loaded rectum might by simple pressure induce severe sciatica. On its anterior aspect we have the peritoneal *cul de sac*, the vesiculæ seminales, prostate gland, membranous and bulbous urethra, in the female the uterus and vagina. Its relation to the peritoneum may be thus expressed—The upper fourth is completely enveloped except a line posteriorly corresponding to the divergence of the two layers of the meso rectum to enclose the bowel; the two middle fourths are covered anteriorly and laterally; the lower fourth is uncovered by the membrane. In addition to the serous investment we have the muscular and mucous coat, with the connecting media common to all such hollow viscera.

The muscular layer consists of two coats, which are more pronounced in the large intestine and here especially, longitudinal and circular. The first are thick and strong, uniformly distributed over the tube, and remind us forcibly of the structural arrangement of the œsophagus, between which and the rectum may be found some striking parallels; they are well marked at the upper part of the tube. At the termination of the bowel a peculiar arrangement has been described by Kohlrusch. They are said to pass within the deep sphincter to be inserted into the mucous membrane, constituting a *sustentaculum tunicæ mucosæ*. I think, however, that this description is more applicable to the fibres of the levator ani muscles which take this course, and would be more likely to sustain the mucous membrane. A relaxed condition of such fibres might explain the occurrence of some forms of prolapsus recti.

Horner gives a remarkable description of these longitudinal fibres. He says they pass between the deep and superficial sphincters, and having reached the lower border of the former, they loop under it, and then ascend on its inner surface for two or three inches between it and the mucous membrane, into which they are inserted. He says undue action of these fibres is a constant cause of prolapse. I have not been able satisfactorily to demonstrate this arrangement of fibres, so that I cannot verify Horner's description.

The circular fibres are collected at the termination of the bowel into a deep and strong band, which surrounds and closes the canal—the internal sphincter. The superficial sphincter is a cutaneous muscle, having little connexion with the muscular wall of the intestine.

Attention has been directed to many fasciculi scattered over the wall of the rectum, such as the sphincter superior, or “annulus” of O’Beirne, situated above the dilatation or ampulla between it and the sigmoid flexure of the colon, which he connects with his peculiar views of the act of defecation. They are seldom sufficiently marked to deserve the appellation of “sphincter.” The “sphincter of Nélaton” has been described as a band of reinforcement on a level with the base of the prostate gland, two inches and a half from the verge of the anus. This band does not embrace the whole circumference of the intestine. It has attracted the notice of surgeons as being one of the most common situations at which narrowing occurs. Many distinguished anatomists have denied the existence of this sphincter, and certainly there are many subjects in which no such band can be demonstrated. Reviewing the muscular wall of the rectum, I think we may fairly doubt the existence of such a state as spasmodic stricture of the bowel, but I think we may concede the existence of a sort of retrostaltic action by which alimentary fluids may be moved upwards, so as to pass into the large intestine above, there to undergo a sort of digestion and absorption, offering a more rational explanation of rectal alimentation than the hypothesis of *direct* absorption from this bowel itself.

The submucous coat, or fibrous “*tunica propria*,” is remarkable for its density and strength. The mucous lining presents a rugose appearance, and has been studied and described with minute detail, with a view to elucidate its pathology. It is very loosely connected to the subjacent tissue, so that when the bowel is contracted after death folds are found taking various directions, both transverse and vertical, which indicate that the organ is capable of alterations in its shape and size. The position and arrangement of these folds have been fixed rather arbitrarily by some anatomists. Such are the “valves” described by Houston, and the “pillars” of Glisson.

Dr. Houston was for many years Curator of the Museum of the Royal College of Surgeons in Ireland, which, even to this day, proclaims the

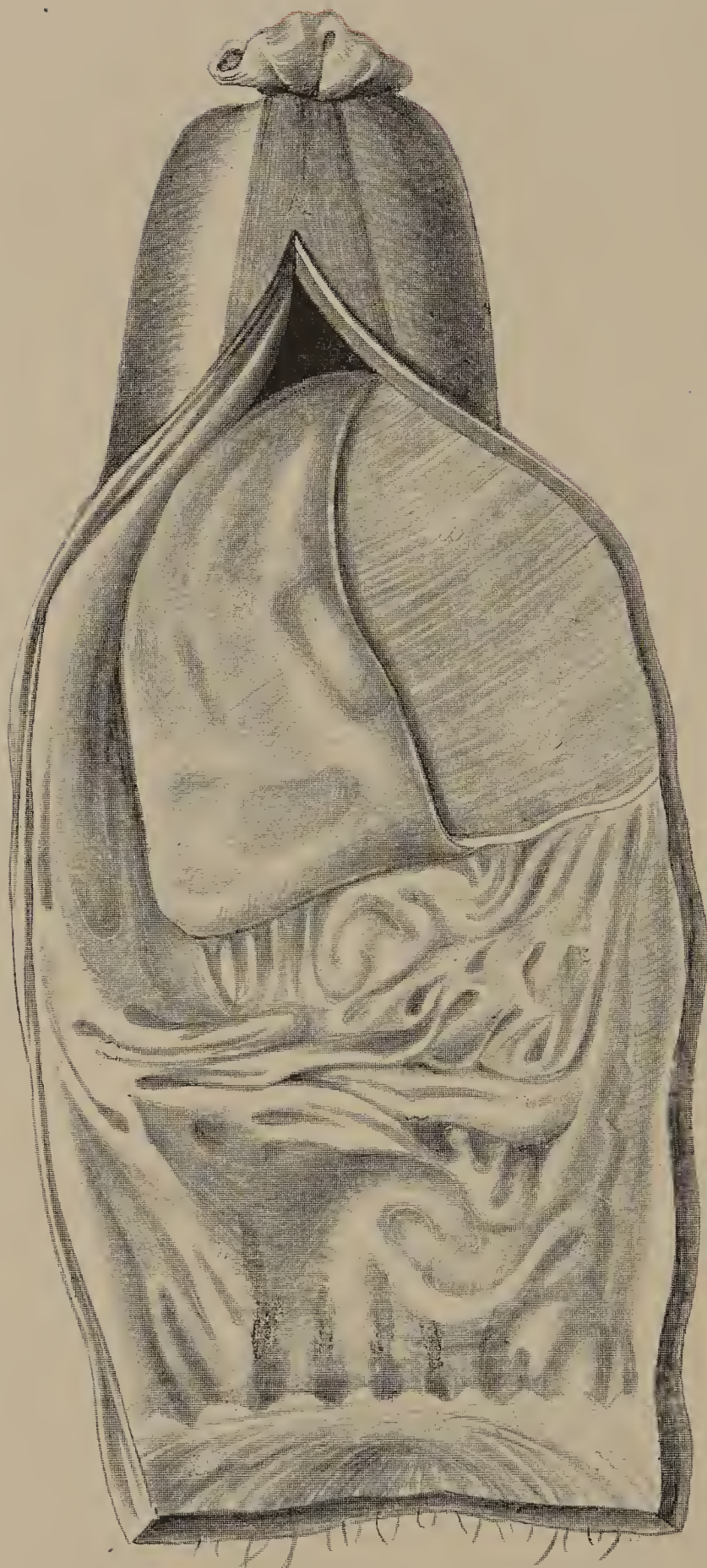
skill of his master hand, and bears testimony from its shelves to his fertile ingenuity, a monument of honest and enduring work.

In the fifth volume of the "Dublin Hospital Reports" he gives a detailed description of these so-called valves. He enumerates four of them to be usually found arranged in a spiral manner around the walls of the intestine. The lowest, when present, occupies the posterior and left wall; the second, which is usually the largest, most perfectly marked and most constant, is on the anterior wall, opposite to the base of the bladder; the third valve is placed directly on the left wall; the fourth is the highest, and is situated on the right wall. The alternate or imperfect spiral arrangement he compares to the well-known spiral fold in the intestine of the dog-fish. To these valves he assigns the function of sustaining the fæcal mass, so that it may not press on the sphincter until the rectum is fully distended. It may appear rank heresy to throw any doubt on the valves of Houston, but for my own part, having many hundred times demonstrated the rectum for class purposes, I have in few subjects found these folds to present the shelf-like appearance or to occupy the definite position assigned to them, or to merit the name of valves; and it is certain they cannot fulfil the functions attributed to them, even were such functions in accordance with the physiology of the bowel. The mode of demonstrating these folds by injecting spirit into the partially distended intestine is simply a substitution of artificial anatomy for natural appearances, which cannot be too strongly condemned. By this proceeding similar valves might be exhibited in the stomach or bladder or any other hollow viscus whose walls are liable to alternations of distension and contraction, and the mucous membrane loosely attached. That the lining coat presents many folds, both longitudinal and transverse, cannot be denied, and should never be forgotten by any one who attempts to pass an instrument into this tube. These are for the most part temporary, and could be in a great measure obliterated when the rectum was occupied by fæces, and therefore would be absent when they were most needed to perform their sustaining function. This hypothesis, besides, assumes the fact that the rectum is a reservoir for the fæces as the bladder is for the urine, an assumption which all are not so willing to concede, and which I can hardly myself admit.

The rectum, like the œsophagus, would appear to be constructed rather as a contractable passage than a membranous reservoir, and I think the views put forward on this subject by Dr. O'Beirne, of Dublin, have not received as much attention as they deserve. It is wonderful how we feel inclined to worship *authority* in anatomy and surgery, and how difficult it is to dispel a dogma which comes to us endorsed by a well-known name, no matter how much of error or incongruity it may involve.

I have occasionally met with a peculiar condition of the rectum in the living subject, in which all rugosity of the mucous lining appeared com-

PLATE I.



COLUMNS AND ANAL VALVES.—(GLISSON.)

pletely obliterated. The finger, when passed through the anus, seemed to enter a large globular cavity, perfectly vacant, with walls absolutely smooth. The first impression would be as if the bowel was greatly distended with gas, but none passes along the finger or escapes after its removal. I have not been able to connect this state of the bowel with any special morbid condition. I lately observed an example of it in No. 6 ward in a case of severe melæna, in which a digital examination became necessary for the purpose of diagnosis. In such cases the valves are completely effaced; further, I think comparative anatomy proves beyond doubt that when the contents of the bowels are intended to be delayed, the reservoir for such purpose is not the rectum but the cells of the colon, the shape of which gives such a characteristic form to the excrement, as in the goat and the horse.

It appears more than probable that the intestinal contents pass into the rectum as a propelling conduit by which they are driven towards the anus. If the pressure be resisted the continued contraction of the tube forces the contents in the direction in which there is least resistance offered to its passage—namely, back to the sigmoid flexure. After a time the muscular coat may become exhausted and may permit the fæces to accumulate, forming those masses of scybala so often met with by the surgeon as a cause of obstinate constipation, and even ileus. It may be that the habits and exigencies of civilisation have effected changes in the organisation of the bowel, which have been and are being transmitted by hereditary influence; but I have never met with any such hindrance to the passage of the finger or instrument as could be attributed to shelf-like folds across the lumen of the bowel before it terminates in the anus. The membrane assumes a remarkable disposition which, however it may vary in distinctness, is never absent. I allude to the vertical ridges or pillars with their connecting folds—"the columns and anal valves of Glisson"—with which so many writers associate the name of Morgagni. There are six to eight of them; they taper gradually from below upwards, and are said to contain longitudinal muscular fibres. We can trace into each column one of the parallel rectal arteries described and delineated by Quain. By long-continued disease, and consequent determination of blood, these vessels may attain the size of a crow quill, and might be a source of dangerous hæmorrhage. Adjoining columns are connected at their anal terminations by semilunar folds of mucous membrane. The concavities directed upwards—"anal valves"—having a faint resemblance, as stated by Ribes, to the sigmoid valves at the aortic and pulmonic arteries of the heart. (Plate I.)

These are not merely folds to admit of dilatation, and it is difficult to assign any physiological or mechanical function to them; for the pathologist, however, they possess very great interest, as hypertrophy and hyperæmia of these columns constitute an important variety of internal

piles. The rectum derives its supply of blood from three sets of arteries—superior, middle, and inferior hæmorrhoidal—from the inferior mesenteric, internal iliac, and pudic arteries. The first, the chief supply, having passed down in the layers of the meso-rectum divides into two branches, each forming a loop at the side of the bowel, convex downwards, from which branches perforate the walls and descend beneath the mucous membrane in parallel lines, sending a vessel into each of Glisson's columns. A preparation in our museum illustrates this arrangement. (Plate II.) The veins which arise from these capillaries establish a communication between the portal and caval systems, hence the undoubted value of local bleeding in the vicinity of the anus in hyperæmia of the liver; emerging from this capillary plexus they take a course which renders them specially liable to the varicose condition. Most of you are aware of the beautiful arrangement of fibrous arches by which nature has guarded the vessels which run among muscles, and your memory will recall many such, as the ligamentum bicornu at the axilla, Corbet's fascia, and semilunar fascia of the biceps for the brachial artery, Poupart's ligament, Hunter's canal, the oval opening in the adductors, the soleal arch over the posterior tibial, the aortic opening in the diaphragm; in this respect the rectal veins are placed at a disadvantage. They traverse oval slits in the muscular fibre of the deep sphincter like button holes, and being destitute of valves every action of this muscle causes a temporary interruption to the flow of blood and consequent congestion, the continuance of which will lead to actual disease.

And now let me impress on your minds the important relations which the finger fully passed into the bowel presents as guides to the surgeon. In front of the anal verge, about one inch and a quarter distant, is the bulb of the urethra, the intervening space is known as the "recto-bulbar." Deeper we have the membranous portion of the urethra, one inch and a half from the anus. Still deeper we have the superior posterior border of the prostate gland, two inches and a half from the verge, while at a distance of four inches, about the length of the entire finger, we have the pelvic reflection of the peritoneum; passing lower down in front, imbedded in the concavity of the anterior wall, lies the prostate gland, only separated by the recto-vesical layer of the pelvic fascia, and a peculiar pearly adenoid connective tissue, containing neither fat nor serous infiltration.

A short distance above the anus the bowel expands into a dilatation known as the "ampulla," well marked in advanced life, but not existing in childhood. This sometimes overlaps the prostate at either side, and may be thus a source of trouble in the operation of lithotomy. Passing the finger well to either side we may feel the pulsation of the deep pudic artery as it runs along the ramus of ischium and pubis; we cannot in most cases feel the iliac arteries, but we can with certainty, by the

PLATE II.



DISTRIBUTION OF THE ARTERIES OF THE RECTUM.—(QUAIN.)

application of Davy's lever, compress them so as to control hæmorrhage in amputation at the hip joint, and similar proceedings.

On either side of the rectum we have the space so important to lithotomists—the “Ischio-rectal of Velpeau”—filled with a cushion of soft elastic fat to guard the bowel against injurious pressure in the act of defecation. We cannot enter fully at this time or place into the descriptive anatomy of this region; it can only be studied with any profit on the subject in the dissecting room. These spaces would appear to communicate posteriorly behind the rectum, for we constantly find matter burrowing from one to the other, surrounding the bowel like a horseshoe. Above these spaces we have a remarkable and interesting surgical region, which is not usually described in your class-books or taught in the schools. The “pelvi-rectal space” of Richet, bounded below by the levator ani muscle, invested with the rectal fascia on its upper, and the anal fascia on its lower surface, above by the peritoneum, internally by the wall of the rectum. It is occupied by a quantity of loose areolar tissue, which extends back to the sacrum and the sacrosciatic notches on either side.

This space is the seat of one of the varieties of abscess which may lead to rectal fistula, and has on that account attracted the attention of surgical pathologists rather than anatomists. I have at present under my care a gentleman residing in this neighbourhood who has had an abscess of this kind, and I do not think I ever saw a patient endure more intense suffering than he did while the matter was making its way to the surface.

The cleft of the buttock may be the seat of many diseases, some of which are trivial in their nature, while others are most alarming, and fraught with peril. The orifice of the anus may be the seat of simple irritation, leading to very painful *excoriation*. This may be the result of ordinary diarrhœa, and is caused by the repeated action of the bowel and the necessity for frequently cleansing the part. In corpulent subjects it may be caused by the friction of the opposed surfaces from walking or riding in warm weather—the *intertrigo* of dermatologists. The condition does not present much clinical interest. It will disappear on the removal of the cause by the use of warm fomentations and the application of vaseline or lead wash. We have a very troublesome affection—*pruritus of the anus*—and I know of no disease so trifling in its nature which is capable of causing such intense suffering and discomfort, actually undermining the health by continued loss of sleep at night, while the intolerable itching by day deprives the unfortunate individual of every social comfort and enjoyment. Now, you must remember that this is in reality a symptom only and not an essential disease, and until you have searched and found the ultimate cause of it your treatment will be unphilosophical and unsuccessful.

With this view a careful examination of the cleft should be made; and, bearing in mind the many causes which may give rise to it by the method of exclusion which we have frequently exemplified at the bed-side, you come to that which explains away the greatest number of the symptoms and appearances. Almost every morbid condition of the rectum may be followed by this intense itching, and until its lining membrane is brought into a healthy state local treatment must be wholly ineffectual. It may be caused by mere errors of diet—spiced food especially containing capsicum, game in a high state of decomposition, and various kinds of shell-fish. I have seen some very obstinate cases which were the result of gout, and I have known it to be produced by prolonged sitting on an office stool covered with American cloth—at least there was no other way of accounting for it—and changing the seat was followed by quick subsidence of the symptoms. In children it usually indicates ascarides in the rectum, and in the female it may indicate uterine disorder. Having removed the cause we usually find the distressing symptoms rapidly disappear. This may be aided by various local applications—lead lotion, milk of bitter almonds, infusion of tobacco; hydrocyanic acid, 1 drachm in lime water, 8 ozs.; ice-cold water, or the warm bath in more obstinate cases; tar ointment, or the ointments of the metals—lead, zinc, and nitrate of mercury, in equal parts. You have to bear in mind a number of such remedies, as you are obliged constantly to vary your treatment, and what you find successful in one case will fail you in the next you have to treat. When the disease has become chronic the irritation and friction will give rise to a thickened and fissured condition of the verge of the anus which will demand active treatment, such as the application every second day of a 10-grain solution of nitrate of silver. In order to be accurate you must not confound two distinct conditions which may occur here—*pruritus* and *prurigo*. The first is not essentially a disease of the skin, but a morbid condition of innervation, and any appearance of eruption is caused by the mechanical friction. In *prurigo* there is from the first an eruption of papillæ, accompanied by smarting and itching. The treatment is pretty much the same, but *prurigo* is a local disease. *Pruritus* is the local manifestation of remote disease.

When the disease persists after the cause has been removed, you must adopt the most rigid restrictions as to diet—absolute temperance, change of air, warm fresh water baths, with Harrogate or Buxton spas.

The anus may be attacked by that hydra of skin diseases, eczema. Hebra describes eczema hæmorrhoidale, characterised by an eruption of vesicles extending from the verge of the anus along the raphe to the perinæum. I have often seen it as the result of the gouty diathesis. The eczema marginatum of Hebra is said to occur here; but I believe it does not, as a rule, extend into the cleft. It is remarkable for its

raised margin, while the spots seem to fade completely at the centre. He says it is common in shoemakers. Commencing between the left thigh and the scrotum, it spreads forward over the pubes and back as far as the border of the buttock. It is amenable to the ordinary treatment of eczema—drying powders, astringents, and, above all, the use of some absorbent material; fine tenax with its odour of tar is very valuable; Lawton's cotton gives great comfort by promoting cleanliness and keeping the parts from being soddened by excessive moisture. Crusts do not form here so commonly as in ordinary cutaneous eczema, but when they do there is a trifling matter of practical detail in their treatment which requires your attention; neglect of it may cause your patient much unnecessary trouble and discomfort. In this situation it is desirable to remove any crusts which may form, and we find them attached to the skin by hairs, which, should they be cut in order to free the crusts, will give rise to much pain and smarting, the stumps of the hairs pricking and irritating the tender surface on the opposite side of the anus. Moisten the crusts with a little soft or potash soap and water, but never cut them off. An American surgeon alludes to what he calls “trichiasis” of the anus, from its resembling the malposition of the eyelashes. After the operation for fistula the hairs projected into the wound and prevented it from healing; he advises them to be cut off. This should never be done; they should be pulled out by the roots. This, though painful, will save the patient much future annoyance.

In this situation we find morbid growths of various kinds. Some are simple, as the *fibroid and the common wart*; some specific, as the *condyloma or mucous tubercle*; some malignant, as *epithelioma*. The fibroid most frequently manifests itself as the withered remains of an external pile, a flap or tab of shrivelled integument which has been the seat of hyperæmia and consequent exudation, whereby it has become infiltrated with fibro-cellular tissue. In the residents in hot climates they may attain a large size, and cause much inconvenience; becoming ulcerated on the surface they may pour out blood and assume many of the characters of malignant disease. They may be easily removed with the scissors, taking care not to encroach too much on the skin at the base, so as to cause subsequent contraction of the orifice. They will be found composed of all the tissues of the general integument.

A wart, or papilloma, consists of simple hypertrophy of the papillæ which stud the surface of the skin, composed of an epithelial covering, a fibro-cellular basis, and capillary loop. If the irritation be prolonged the follicles in the vicinity may participate in the disease, and pour out an acrid secretion capable of producing by its irritation similar growths on sound skin. They are always attached by a narrow pedicle or stalk, over which the wart expands, with a rough surface, so often compared to a cauliflower. They should be nipped away with a curved scissors,

and each bleeding point touched with nitric acid or a fine point of actual cautery, in order to guard against their return, which is otherwise likely to occur and cast discredit on your surgery.

Condylomata are flat, wart-like growths—the “mucous tubercles” of syphilis—occasioned by contact with irritating discharges, more especially that of gonorrhœa, when due attention is not paid to cleanliness. Our venereal ward is never without such cases. Go in there and see them for yourselves, and you will learn more than from all the verbal or written descriptions which have ever been given. Observe the soft, white, and flattened appearance which they present, resting on a broad base; and whenever you find them examine the throat and you will, more than probably, detect some evidence of syphilis. They are easily removed by dusting with calomel or oxide of zinc, or brushing with acetic acid, black wash, or a 20-grain solution of nitrate of silver. The ointment of the nitrate of mercury is also a favourite application in such cases.

We cannot leave the subject of these excrescences without alluding to a remarkable variety described by the late Abraham Colles, whose writings have recently been so ably edited by Dr. M'Donnell:—“At each side of the anus a small projection, which on its external surface appears a mere elongation and thickening of the skin, but internally presents a moist appearance, not exactly like the lining membrane of the gut, nor yet can we say that it is ulcerated. These two projections lie close together below and divaricate above, presenting a resemblance to the mouth of a ewer. Whenever this external appearance exists, I feel almost certain of finding a stricture of the rectum before the finger is pushed as far as the second joint into the gut.”

I have had repeated opportunity of verifying the accuracy of this statement, and it is well to bear the appearance in mind, as it not only tells you that there is a stricture, but also that it is low down in the bowel. I have observed these ewer-shaped folds more frequently in females than in males. The verge of the anus may also be the seat of syphilitic fissures. These “rhagades ani” of the old writers, like other muco-cutaneous outlets, may be attacked with infiltration of epithelioma. As these affections, however, belong to the category of specific disease, and are modified by their intrinsic nature rather than the locality in which they occur, we may not pause to consider them at present.

CLINICAL RECORDS.

SIR PATRICK DUN'S HOSPITAL.—*Clinical Reports.* By J. MAGEE FINNY, M.D., Dubl.; F.K.Q.C.P.; King's Professor of Practice of Medicine in the School of Physic in Ireland; and Clinical Physician to the Hospital.

THE following cases illustrate some points of practical and clinical importance in the symptomatology and management of cardiac disease, and, happening to be in the ward at the same time, they were the subjects of frequent examination and comparison:—

CASE I.—*Mitral Regurgitation ; Extreme Excentric Hypertrophy of Left Ventricle ; Embolism of a Branch of Dorsalis Pedis Artery ; Pericardial Thickening.*—Mary H., aged nineteen, was admitted October 23rd, 1882, and was under observation till she left hospital on December 17th.

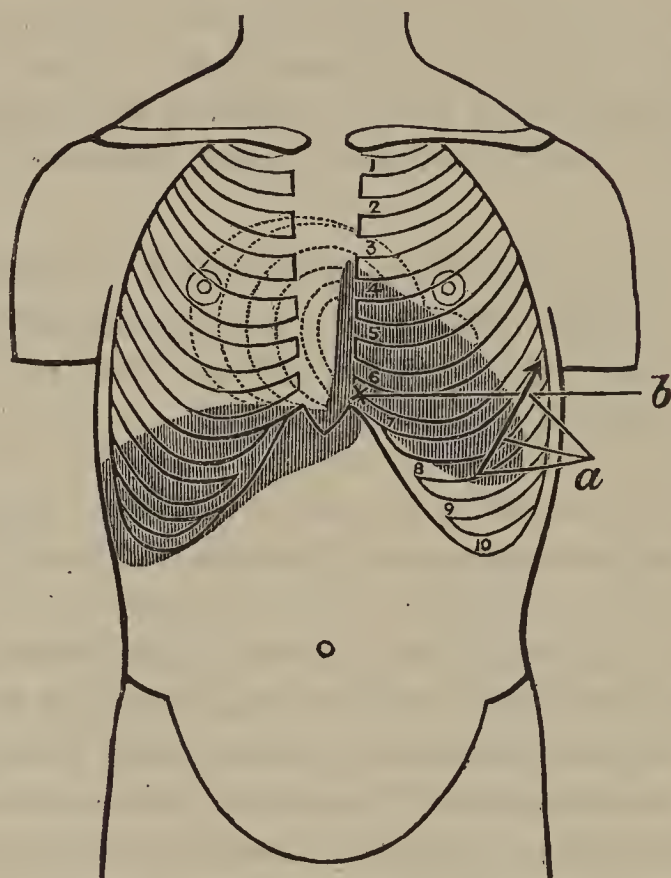
History.—About Christmas, 1881, she had rheumatic fever, and was ill for three months. She was not aware of her heart being affected, as she was told she had bronchitis, and experienced pain in the left side.

When seeking admission she complained of great shortness of breath, inability to take any exercise, palpitation, and pain in the region of the heart; her feet were slightly swollen, and she had a short irritable cough. She had derived relief during the months of May and June last as an extern patient, under the care of Dr. Finny, in the City of Dublin Hospital.

Physical Examination on admission showed an extreme degree of excentric dilatation with much hypertrophy. When the chest was exposed the whole anterior portion of the thorax, at either side of the sternum, heaved with each contraction of the heart, and the observer's hand or stethoscope was forcibly lifted. The impulse was very widely visible (as shown by dotted area in Fig. 1), extending on the right side from above the third rib through the mammary line to the seventh rib, and on the left side from the second intercostal space to a point three and a half inches outside the left mammary line, where the apex-beat was situated between the eighth and ninth ribs. The cardiac dulness was not as great as the heaving just noted. It was, however, much increased. Commencing at the fourth left costo-sternal articulation it extended vertically on the right side in the left sternal line to the base of the ensiform cartilage, when it passed a little to the right to the mid-sternal line. Its limits towards the left side were along the fourth rib, as far out as the mammary line, and then gradually, in a slightly curved line,

to the eighth intercostal space, the inferior boundary connecting this point with the base of the ensiform passed through and to the left of the cartilages of the seventh and eighth ribs. Respiration did not lessen the area of cardiac dulness.

Fig. 1.



Heaving impulse-dotted area. (a) Mitral systolic murmur in direction of —→
 (b) Reduplication of second sound.

A systolic thrill could be felt under the left breast. There was a distinct and rather rough murmur audible over the lower part of the cardiac dulness, being sharply pronounced in the seventh space, and carried into axilla. With almost equal clearness it was heard over the lower half of the left side, and at the back, and was not confined, as is often the case in mitral regurgitation, to a limited space near the lower angle of the left scapula. On passing the stethoscope forwards from the apex-beat towards the sternum it lost much of its distinctness, and was to a great extent lost above the level of the sixth rib.

Soon after admission, while the heart was excited, and the pulse ranged 128, a presystolic murmur could be detected at the apex, as well as a triple action of the organ; but as the pulse came down, under the influence of rest and digitalis, the presystolic murmur disappeared, while reduplication of the second sound became more marked over the junction of the sixth and seventh ribs with the sternum. On carrying the stethoscope towards the base there was not only no murmur audible, but the first sound of the heart was very feebly heard, and weak out of all proportion to the impression of heaving force conveyed to the ear and

head. There was some accentuation of the second sound over the pulmonary artery.

The jugulars were swollen, and pulsated slightly. The pulse was always about 100, and was very small, ceasing for an instant on vertical elevation of the arm. The left lung seemed much smaller than normal, and but little vesicular breathing could be heard in the lower lobe. The liver was enlarged, without any pulsation being detected in it, though this sign was carefully looked for. There was no enlargement of the spleen, nor, judging from the absence of albuminuria, much renal congestion.

The patient's chief complaint was pain over the lower sternal region, at first towards the left breast, and later on (some five weeks after admission), along the right sternal line. Poultices, mustard epithems, and belladonna plaster gave sufficient relief.

The treatment consisted of envelopment in flannel, strict rest in bed, and a pill of pulv. digit., extract colocynth co., ext. conii, and extr. hyoscyami, of each one grain, three times a day. Diet—Milk and beef-tea.

Under this she made rapid improvement. Had solid animal food on Nov. 7th, and was allowed up. On 18th Nov. the pills were discontinued, and a mixture of iron and arsenic substituted. This change was not felicitous, as the tongue furred, appetite failed, and pains were complained of in several joints. It was, therefore, discontinued, and iodide of potassium in small doses substituted. On Nov. 29th much pain was referred to the right instep, to a spot over the proximal ends of the third and fourth metatarsal bones, and on Dec. 1st a distinct swelling of a purplish red colour was there visible. There was no doubt of this being an embolon blocking a small vessel. Liq. atropiæ on lint applied under gutta-percha tissue, and smooth bandaging removed all pain, redness, and swelling by Dec. 4th.

The original pills were then renewed, and in a short time the patient was again up, and well enough to leave hospital on 17th of December.

Since she returned home she was very fairly well—as well as she may hope to be—till the 2nd of January, when, after a long walk and exposure, she got a chill, and had a return of the more aggravated symptoms—cough, dyspnœa, and great pain in the left side. The latter was due to a localised pleurisy, friction being audible with respiration over a small area below the angle of the scapula.

The abnormal cardiac sounds were, if possible, more marked than when seen in December, the systolic murmur being loudly audible over the back. There was also a feebly-marked diastolic murmur heard at the base of ensiform cartilage, and it is very probable that a fresh attack of endocarditis has induced slight insufficiency of the semilunar valves.

CASE II.—*Mitral Regurgitation of six months' duration ; Widely-dilated Ventricles ; Tricuspid Regurgitation ; Hæmoptysis, due to Pulmonary Infarction ; Secondary Pleuro-pneumonia.*

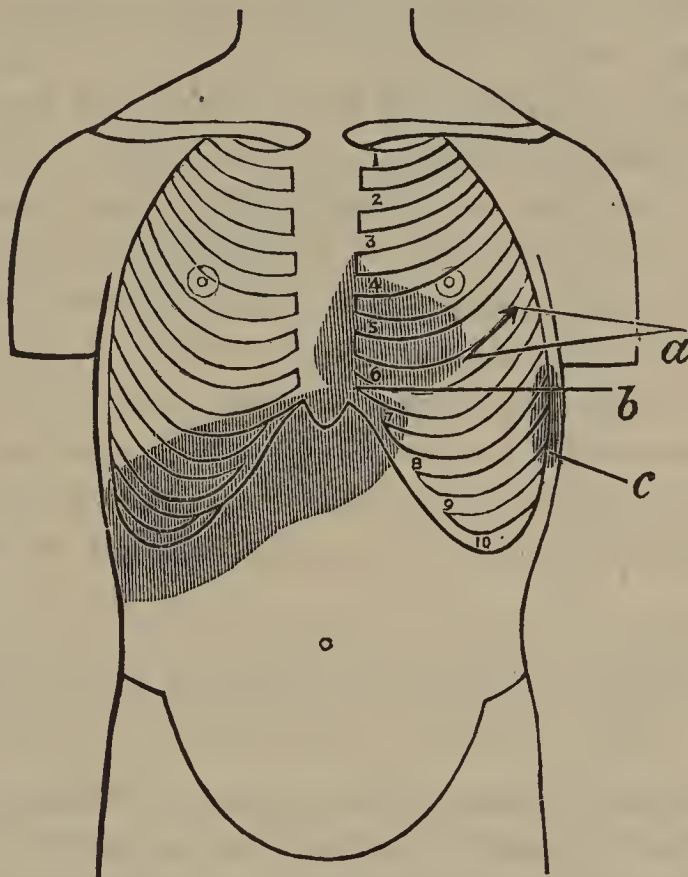
Reported by MR. WILLIAM SINCLAIR DOBBIN.

Kate M'D., aged thirty-four, was admitted Dec. 7th, 1882, under the care of Dr. Finny.

Previous History.—Patient is a dressmaker by occupation ; family and previous personal history entirely satisfactory ; excellent health, till quite recently, having been the rule. About six months ago she remarked that when obliged to run up and down stairs in the establishment in which she was employed, she suffered from dyspnœa, which continued to grow worse. In the morning slight puffiness and swelling around the eyes, and in the evening the same phenomenon about the ankles had been for a short time observed. On Oct. 4th, 1882, another symptom of an alarming nature appeared. On that date hæmoptysis was for the first time noted ; the expectoration consisted mainly of mucus, coloured with dark venous blood. The succeeding day she applied for and obtained admission to Sir P. Dun's Hospital, under Dr. Purser's care. There was, at time of admission, a severe pain felt on the right side of the chest, obliging patient to lie on the opposite aspect. Physical examination elicited a mitral regurgitant murmur and dulness over a considerable area adjoining the base of right lung, and there was also evidence subsequently of a slight pleural effusion, which underwent apparently complete resolution. She remained in hospital for six weeks, on Nov. 1st passing under Dr. Finny's care, during which time the quantity of blood was becoming gradually less, and finally disappeared by Nov. 6th. During her stay in hospital there was slight pyrexia, the temperature never exceeding $101\cdot2^{\circ}$, the pulse varying from 80–100. When discharged on 13th, she felt much stronger, and was able to resume work for a fortnight ; but during the week previous to second admission, on Dec. 7th, she was confined to bed. On this occasion complaint is made of a severe pain referred to left side, increased by pressure or respiratory movements. The old symptoms—dyspnœa, palpitation of the heart, as well as pain occasionally felt in region occupied by that organ, and extending backwards to angle of left scapula—still continue. The ears and nose of patient are considerably congested, though her cheeks do not show a decidedly venous tinge. There does not appear to be any œdema of superficial parts so long as recumbent position is preserved. A posture of semi-orthopnœa is now assumed as most comfortable, though on the first night after admission it was complete, the patient being unable to lie down at all. There is slight cough, attended with expectoration of an extremely viscid sputum tinged with blood, which is of much less venous hue and smaller in amount than formerly. Some of

the sputa are blackish-red, others rusty-coloured. Pulse is small, compressible, but not irregular, 100–112. Respirations shallow and very quick, usually 30, often reaching 40. Temperature on admission, 99.4° rose on only one occasion to 101.5° , and was afterwards subnormal.

Fig. 2.



(a) Mitral systolic murmur. (b) Tricuspid systolic murmur. (c) Anterior edge of infarcted lung.

Physical Examination.—The apex-beat is close to and under the nipple in the fifth interspace, and against the sixth rib, and the area of cardiac dulness extends from this point to the middle of the sternum at the level of the fifth rib, showing much dilatation of both ventricles, but of the right in particular; and there seems to be very little compensatory hypertrophy. A systolic murmur of loud blowing character, extending from the situation of apex beat round to the angle of left scapula, is heard on auscultation. A murmur synchronous with, but which may be clearly differentiated from, the above can be heard at the level of the fifth left costal cartilage. The pulmonary, as compared with aortic second sound, is strongly emphasised.

On examining the lungs there is a large area of dulness elicited on percussion, extending horizontally from the posterior axillary line at the seventh rib almost, but not quite, to the spine, and from the seventh intercostal space to lower margin of the eleventh rib in a vertical direction. This large area of dulness was not present at first, but was reached on the fourth day after admission, and was evidently the result of the embolism of a branch of the pulmonary artery, and of subsequent

hæmorrhagic infarction. The breath-sounds are here, in comparison with the opposite side, feeble; there is no tubular breathing or bronchophony, and vocal fremitus seems diminished. Anteriorly the line of liver dulness is lower than normal, especially in the area corresponding to the left lobe, where a tumour may be obscurely felt, the necessary manipulation causing considerable pain to the patient. The external jugular veins are distended, pulsation visible, corresponding in point of time to the systole of heart, and may be arrested by pressure applied between the spot under observation and the heart. Urine scanty, loaded with lithates; is free from albumen. Bowels constipated.

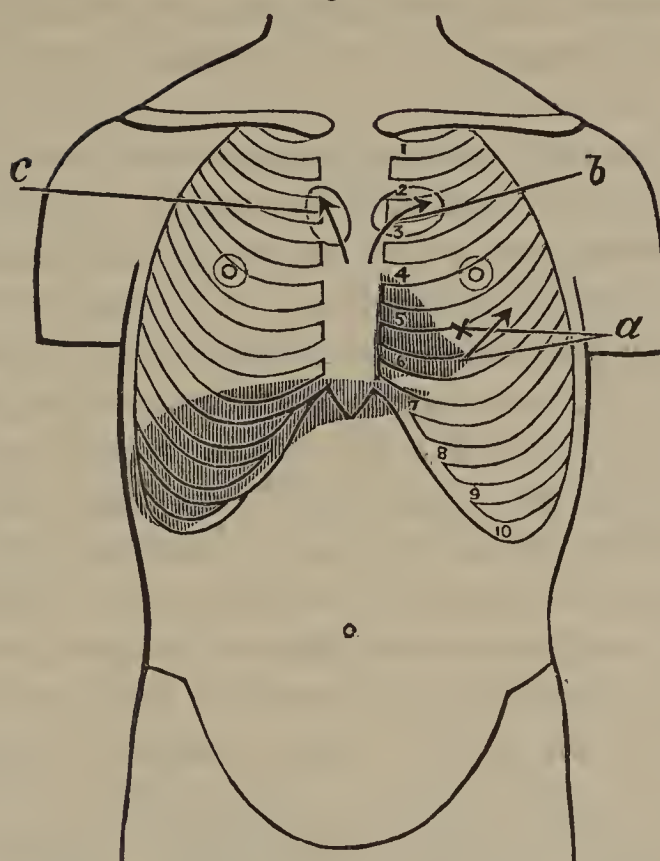
After a few days' residence in hospital the patient rallied greatly, being able to lie down flat at night. The treatment consisted of sulph. quiniæ, acid. sulph. dil., with sulph. magnesiæ, for some days; and then, as the bleeding ceased, and the functions of the body were naturally exercised, a mixture of ammonia and ether was substituted, and she was ordered middle diet. She left hospital on 18th, much improved. As there was no irregularity of the pulse, digitalis did not seem called for.

CASE III.—*Cardiac Pain; Coexistence of three Murmurs, Systolic in time; Absence of Hypertrophy of Ventricle; Treatment by large doses of Iron.*

Reported by MR. ARTHUR E. SWITZER.

Eliza W., domestic servant, aged eighteen, was admitted to this hospital, under Dr. Finny, on November 26th. She complained of great weakness attending the slightest exertion, but more particularly of a severe burning pain between the third and fourth ribs in the left parasternal line, extending back through the chest to the inferior angle of the left scapula. About two months ago she received a blow from the handle of a mangle, which struck her transversely across the epigastrium and both hypochondriac regions. The pain did not appear till a fortnight after the accident, and has continued without intermission ever since. She does not attribute the pain to the blow she received. The pain is most severe when she stoops or lies on her left side, and is somewhat relieved by lying on the right. She was previously under treatment, but did not derive any benefit from it. She also complains of a throbbing headache, which is worse on sitting up. She does not sleep well, and is rather nervous. If made to sit up suddenly she feels a dizziness in the head and confusion of vision. There is a history of brain fever when she was five years old, and of illness three months ago from whooping-cough. Menstruation has been irregular, having been but twice in the last eleven months. She appears very anæmic, but says she has always been pale. On examination of the heart the apex-beat cannot be seen, and is with difficulty felt in the normal situation; a basic systolic impulse of moderate force can be felt in the third left intercostal space in the parasternal line. The area of cardiac dulness is not increased.

Fig. 3.



(a) Mitral systolic murmur. (b) Pulmonary systolic murmur: (c) Aortic systolic murmur.

On auscultation three murmurs, each systolic in time, but occupying different regions and traceable in different directions, are audible—one at the apex, in the fifth space below the mamma, as far as the left axillary line. It is heard also at the inferior angle of the left scapula. Its character is rough, and it accompanies the first sound. The second is of a very blowing, harsh character, very superficial, and almost painfully near the ear, and is heard at its maximum in the seat of the basic impulse at the left edge of the sternum between the second and third ribs. As the stethoscope is moved to the middle of the sternum its distinctness is quite lost, and its place is taken by the third murmur in this situation, also systolic, and carried up in the direction of the aorta, and easily recognised in both carotids. Pulsation in these vessels, particularly in the right, is very visible. Change of posture does not produce any alteration in any of these murmurs. The jugulars are not distended; a loud humming sound, continuous, but intensified with each beat of the heart, is heard in the jugular, *as the patient lies as well as when sitting up*. On placing the bell of the stethoscope over the closed eyes a well-marked venous hum is to be heard (? in the cavernous sinus).

The radial pulse is small, compressible, regular, and 96; respiration 24, and temperature 99°.

Careful examination of the lungs revealed slight comparative dulness and want of expansion of the left apex, with some subclavicular flattening. Appetite is bad, with dislike to animal food. There is, however,

none of the depraved appetite common to chlorosis. Bowels much constipated. She sleeps badly, and she required at first sleeping draughts containing bromidi potass., gr. 15; hydrat. chloral, gr. 15; liq. opii sedat., ℥. xv.

Treatment.—After the bowels were opened she was given a mixture of tinct. digit., tinct. aconiti, and acet. ammoniæ. As, however, but slight improvement followed, and as two, if not all three, murmurs were considered hæmic in origin, the mixture was discontinued, and she was given, on December 2nd, sulph. ferri. (Blaud's pills), in increasing doses—at first two pills (*i.e.*, ferr. sulph., gr. v.), ter in die, and in two days three pills, and so on till five pills were taken three times a day on December 13th (*i.e.*, gr. 12½, t.d.s.); and these she continued, with marked benefit, till the 27th, when she left hospital. Headache, always a prominent symptom, was very bad on 22nd, but the iron pills were not stopped, inasmuch as the pain was relieved by lying down and increased by sitting up—the reverse of what would be the case were the headache due to hyperæmia of the brain. Citrat. caffein, in two doses of two grs. each, at an interval of an hour, was sufficient to meet this distressing symptom. Menstruation occurred while under treatment.

The effect of the iron on the murmurs was most remarkable. The aortic systolic was the first to disappear. The next to show signs of improvement was the mitral, which became very much less pronounced, and limited to the fifth intercostal space.

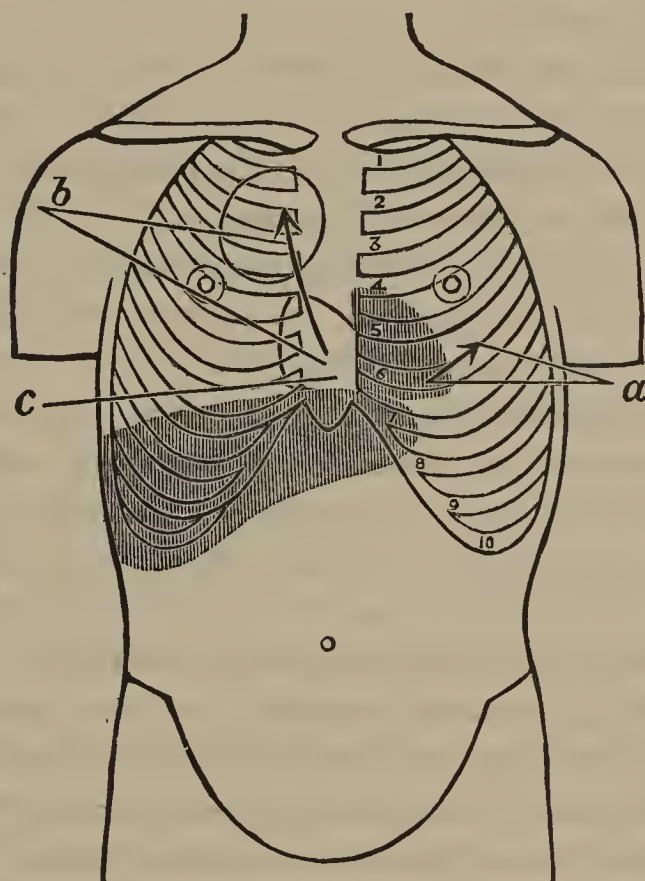
The pulmonary systolic murmur retained its harsh blowing sound till within a short time of her leaving hospital, it then became fainter and softer, and was still to be heard when she left, but over a very much smaller area.

CASE IV.—Mitral Regurgitation consequent on Aortic Obstruction; subsequent Aortic Regurgitation.—Mrs. M'D., aged fifty-four, nursetender, of healthy family and personal history, was admitted under Dr. Finny's care the latter end of December, 1882, having been previously admitted in July, 1882, for a similar attack of heart disease. She had recently been engaged as ladies' nursetender, and had had an unusually hard situation, having had almost no sleep for a fortnight. The day before admission she was unable to walk a quarter of a mile without frequently resting "to catch her breath;" cough was short and hacking; there was great distension of the abdomen in the epigastric region; no food could be retained on the stomach; the bowels were confined, and she had had no refreshing sleep for several nights; she looked sallow, haggard, and seriously ill; pulse was 130, most irregular, small, and compressible; and the ankles were œdematous.

Physical Examination.—Heart was acting with great irregularity as to rhythm and force; the area of cardiac dulness was slightly enlarged

towards the left; the apex-beat was felt against the sixth rib, and a systolic thrill could be occasionally detected below the mamma. A loud and rough murmur, systolic in time, was heard over the whole heart, but intensified at two points—the apex and the third right costosternal articulation. The murmur was carried into the arteries of the neck as well as into the axilla; the lungs were unaffected; the liver was much enlarged and formed a distinct tumour in the epigastrium; painful on handling. Perfect rest in bed, with diuretics and tinct. digitalis, constituted the treatment at first. The heart responded quickly, and the pulse came down in a few days to 84 and was much more regular. The cit. ferri et ammon. was then substituted, and digitalis omitted. The kidneys had acted well, three and a half pints of urine having been passed on the third day; and the œdema of the feet, and fulness of abdomen had completely disappeared.

Fig. 4.



(a) Mitral systolic, inconstant, rough. (b) Aortic systolic, blowing and loud.
(c) Aortic diastolic, distant and "echo-like."

The cardiac phenomena became clearer as the heart's action became regular, and the systolic murmur, which at first masked all other sounds, was divisible into two (Fig. 4)—one was confined to the submammary region, rough and unequal, and was audible for a short way into the axilla; the other was heard best over the aortic region, and carried up the vessels, it was blowing in character. In addition a third murmur was detected, diastolic, and audible over the lower third of the sternum. It was lost on approaching the apex-beat, as both here and over the second

rib the second sound was pure. This diastolic murmur was very soft, but prolonged almost to the succeeding systole. It could be best described as being like the sound produced on attempting to pronounce "hah" during inspiration. During the time the patient was under observation in July no such diastolic murmur was detected. It is probable that aortic incompetence has been gradually induced by the organic changes in the valves which originally interfered with their free action and caused the obstruction demonstrated by the systolic basic murmur. The patient left hospital for the House of Rest "quite well," in her own opinion, early in January, 1883.

Remarks.—The above four cases are all examples of mitral incompetence and regurgitation. They are, however, like portraits of a family group; and, while in their general features they resemble each other, they have each their respective individuality of significance in relation alike to diagnosis and prognosis.

The general features of resemblance may be shortly enumerated as being the symptoms and physical signs of mitral regurgitation. Thus they all presented—(a) palpitation; (b) excited and irregular action of the heart; (c) a quick but small pulse; (d) pain or uneasiness in the region of the heart; (e) cough and breathlessness on exertion; (f) a systolic murmur at the apex heard into the left axilla; (g) weakness of the muscle of the left ventricle, and in most a systolic apex thrill. Passing from this common centre of likeness they all widely differ—in part, as to the mechanical interference with the sufficiency of the left auriculo-ventricular valves; in part, as to the cause and mode of production of the reflux of blood at each systole from the ventricle to the auricle; and, in part, as to the concomitants or sequelæ, peculiar to each. These peculiarities and differences are instructive and deserve attention.

In Case I., which is a sad example of the ravages produced by rheumatic fever attacking the heart, is seen an instance of (1) extreme excentric hypertrophy of the left ventricle, and (2) a thickened adherent pericardium. That this latter condition complicated the physical sign of cardiac dulness there can be hardly any question; and indeed the extensive area of cardiac dulness, the widely-diffused region of forcible impulse and heaving action, and the diminution of the natural clearness of the heart's sounds along the sternum can be explained on no other theory. The loudness of the mitral murmur, and its intensity towards the axilla and all round the left side, taken in connexion with the feebleness and insignificant volume of the radial pulse, plainly attest to a very extreme dilatation of the mitral orifice, and presumably of the left auricle. And this is further evidenced by the presence of Skoda's sign over the pulmonary valves, the venous pulsation in the neck, and the smallness of the left lung.

In both this Case and Case II. we have examples of embolism. In Case I. the embolon was very small, and derived from presumably the curtains of the mitral orifice. It travelled in the systemic circulation and lodging in a small artery of the foot, gave rise to very slight and transient trouble. In Case II. the starting point of the embolon was the fibrinous deposit on the right auricular appendix, and, being of considerable size, and, lodging in a branch of the pulmonary artery, gave rise to hæmorrhagic infarction of the lungs. This accident occurred twice at short intervals. In October it passed into the right lung, was attended by copious hæmoptysis, and was followed by localised pleuritis; in December the embolism occurred in the left lung, and was followed by extensive consolidation of the lower lobe, accompanied by some pain and slight pyrexia.

Case II., besides the peculiarity already noted and the general evidences of retarded circulation (back-working), differed in its physical signs from all the others in the presence of a tricuspid murmur, and of a distinct systolic pulse in the external jugular vein. It is not uncommon to note jugular pulsation as a symptom of venous stasis, but it is by no means usual to meet with, in cases of recent mitral disease, the positive signs of tricuspid regurgitation, viz.:—a palpable pulsation synchronous with each contraction of the right ventricle, obliterated by pressing the root of the neck, and with a murmur, having its acme at the junction of the left fifth rib with the sternum.

There can be little doubt of the very serious nature and rapid extension of the organic disease here illustrated, whether we regard the powers of the heart in overcoming the difficulties in the circulation, or the amount of regurgitation permitted at the orifice.

Case III. presented many difficulties of diagnosis, and signs full of perplexity to the beginner in the study of cardiac disease, who found it hard to realise that the prominent and striking auscultatory features were not those of advanced organic disease. One sign, that of an aortic direct murmur, presented no difficulties; and although it was not altered by change of posture, it was easily recognised to be due to the anæmic state, viewed in relation to either the altered quantity or quality of the blood. In an adjoining bed was quite another such murmur, heard in the case of a young woman suffering from subacute rheumatism and general anæmia. The chief difficulties lay in the respective significance of the mitral murmur and of that heard in the pulmonary and left subclavicular region. Both these murmurs—or, at all events one—were largely due to the anæmic state. The one about which there is the least doubt as to the absence of structural valvular disease is the pulmonic systolic.

The rarity of *obstructive* disease of the pulmonary valves sufficient to produce so loud a murmur, taken in connexion with the localised percussion dulness over the second intercostal space, the absence of dilatation of the right ventricle, and of general venous stasis, and the presence of

great anæmia, all pointed to the non-organic nature of this murmur. Its excessive harshness and extension were attributable to the retraction and consolidation of the left apex of the lung.

Dr. Balfour adopts the theory of Naunyn as to this basic murmur being due to the blood regurgitating into the left auricular appendix as it laps round the pulmonary artery in this situation. He further is of opinion that its presence is often the earliest and most pronounced evidence of organic mitral incompetence. This conclusion is not accepted—and rightly so; and the value of this sign as a diagnostic of organic disease is even by Dr. Balfour diminished, since he states its occurrence has been almost always found in anæmic and chlorotic patients!

The apex-murmur was due probably to two factors. The first may be an organic incompetence of recent date and of very limited extent. The blow across the lower part of the chest by the handle of the mangle may have caused—as such injuries have been known to cause—some lesion of the valve or the chordæ tendineæ attached to it. The second factor was the dilatation of the ventricle and the impoverished blood.

Under a nourishing diet and iron treatment this mitral murmur greatly diminished in loudness and extent, and though it was present when the patient left hospital it was unaccompanied by any thrill or secondary change in the left ventricle, and the apex-beat, which had been absent, was restored to its normal situation and normal force.

How far the weakness of the ventricle allowed or produced regurgitation by the imperfect action of its muscoli papillares is a matter of pure surmise, but there can be little doubt that such a factor was at work, and that the murmur was due to functional causes rather than organic valvular changes.

Case IV., while illustrating in its symptoms and physical signs the presence of mitral regurgitant disease, is remarkable in being an example of aortic obstructive disease, and of the effect of such disease upon the mitral valve.

The patient was twice under observation, with an interval of five months. Each time she had to seek relief with the symptoms of mitral regurgitation—*e.g.*, œdema of the feet, diminished urine, enlargement of the liver, anorexia, cough, dyspnœa, extreme breathlessness, and a pulse feeble in the extreme and irregular, with a loud systolic murmur, which reached its maximum at the apex and under the left breast, masking all other sounds. It was not until the heart grew quiet and regular under the free exhibition of digitalis that the apex murmur was superseded by a basic one. Two murmurs, each systolic in turn, were then found to coexist; and it was remarkable that as improvement advanced and the evidences of the back-working were removed, the mitral one became much less marked and was limited to the submammary region, while the aortic became louder and was heard over the whole upper half of the sternum.

The case bears the following reading:—Obstructive disease of the aortic valves existed for a considerable time, possibly many months or years. The obstruction was overcome by an increased force of ventricular contraction; the consequent increased pressure of the blood during each systole on the ventricular aspect of the mitral valves in time induced subacute inflammatory changes in these curtains, and after a time a slight regurgitation was permitted. So long as the muscle of the heart was not overtaxed by any unusual or prolonged exertion, the patient suffered in no respect and was quite unconscious of any derangement of the heart. After, however, want of sleep and over-fatigue, &c., and the vital powers of the left ventricle were lowered, irregular action was induced, its walls and muscoli papillares failed to contract normally and fully, increased regurgitation of the blood through the mitral orifice actively proceeded, and all the evils referable to the obstruction of the pulmonic and the deficiency of the systemic circulation rapidly ensued, and the patient was brought to death's door. The primary cause in the vicious circle (aortic obstruction) remained unchanged, but the muscular debility of the ventricle was the immediate factor in augmenting the mitral regurgitation.

These four cases, and particularly the last (Case IV.), are forcible illustrations of the all-importance of rightly estimating the condition of the walls of the heart in the diagnosis, the prognosis, and above all the treatment of heart disease.

The practical lessons these cases should teach may be summarised:—

1. That too much dependence is not to be placed on the presence of the physical signs of mitral regurgitation as evidence of organic disease.
2. That such signs may be due to purely functional derangement and weakness of the heart, or to an altered condition of the blood.
3. That blood murmurs produced in the heart and large vessels may be louder than murmurs due to valvular lesions.
4. That the danger of valvular diseases is enormously increased by, if not directly due to, weakness of the cardiac walls.
5. That increased action and force of the ventricular contraction in the presence of valvular disease is not to be considered a disease, but rather a symptom of disease, and is directly proportionate to the amount of regurgitation or obstruction.
6. That mitral regurgitation is not to be considered in the light of a "safety-valve function" in cases of aortic obstruction, but as an element of increased danger to life.
7. That lowering treatment of the heart's force is rarely, if ever, required in disease of the organ.
8. That indications for treatment in diseases of the heart should be sought from the evidence of the condition of the muscle of the heart, and not that of the valves.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F.M.S.

VITAL STATISTICS

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, December 30, 1882.

Towns	Population in 1881	Births Registered	DEATHS REGISTERED			DEATHS FROM SEVEN ZYMOTIC DISEASES							Deaths from Phthisis	DEATH-RATE per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		From all causes	From seven Zymotics
Dublin, -	348,293	684	858	144	249	-	1	-	3	24	33	12	88	32·0	2·7
Belfast, -	207,671	517	639	98	111	-	12	55	4	12	11	18	74	40·0	7·0
Cork, -	78,361	152	208	19	71	-	-	1	-	-	5	2	26	34·5	1·3
Limerick, -	38,600	63	92	7	43	-	-	1	-	-	1	4	9	31·0	2·0
Derry, -	28,947	61	64	6	20	-	1	5	-	-	2	-	5	28·7	3·6
Waterford,	22,401	35	51	5	18	-	-	-	-	-	1	3	7	29·6	2·3
Newry, -	14,782	30	41	6	11	-	1	3	-	1	1	-	2	36·1	5·3
Galway, -	14,621	33	54	6	16	-	-	-	-	7	2	1	2	48·0	8·9

Remarks.

Intense cold in the early part of December caused a general rise in the death-rate, which was as high as 48·0 per 1,000 of the population annually in Galway, 40·0 in Belfast, 36·1 in Newry, 34·5 in Cork, 32·0 in Dublin, and 31·0 in Limerick. It was 34·2 per 1,000 per annum in the sixteen principal town districts of Ireland, 25·7 in twenty-eight large English towns (including London, in which it was 24·9), 34·2 in Glasgow, and 23·3 in Edinburgh. If we deduct the deaths of persons admitted into public institutions from localities outside the district, the rate of mortality in the Dublin registration district becomes 31·3 instead of 32·0, whereas that of the portion of the district comprised within the municipal boundary is 34·3.

In Galway, Belfast, and Newry the mortality from the seven chief zymotics was very high—namely, 8·9 per 1,000 per annum, 7·0, and 5·3 respectively. In Dublin it was 2·7, compared with 2·0 and 1·8 per 1,000 in the two preceding periods.

The deaths recorded in the Metropolitan Registration District were 858, compared with 725 and 599 in the two previous periods of four weeks each. Old age felt the increased mortality to a greater extent than infancy. The deaths of persons aged 60 years and upwards rose from 226 to 249, while those of children under one year old fell slightly from 147 to 144. This was due to a continued immunity from the eruptive fevers on the one hand and to a greatly increased fatality from bronchial catarrhs on the other.

Zymotic diseases claimed 87 victims in Dublin, being an increase of 20 on the previous four weeks. The fatality from this group of maladies, however, again fell far short of the average in the corresponding period of the previous ten years—namely, 139·8. Not a single death from scarlatina was registered, and the fatal cases of diphtheria fell from 6 to 3. On the other hand, the deaths from whooping-cough rose to 24 from 13, and those from fever rose to 33 from 23. Of the 33 deaths from “Fever,” 9 were attributed to typhus, 23 to typhoid, and 1 to “simple continued fever,” or fever of ill-defined type.

Serious epidemics of scarlet fever, measles, and whooping-cough are rife in Belfast, where diarrrhœal affections are also unusually prevalent and fatal for winter. The deaths from scarlet fever rose from 44 in the previous four weeks to 55, and contributed nearly one-twelfth part of the total mortality. This epidemic is also rife in Londonderry and Newry; and whooping-cough caused as many as 7 deaths in Galway.

As was to be expected, phthisis (pulmonary consumption) continued very fatal—in Dublin the deaths rose from 85 to 88, in Belfast from 60 to 74, in Cork from 16 to 26, and in Derry from 4 to 5.

In Dublin diseases of the organs of respiration were much more fatal than of late. The deaths, which rose from 121 in the four weeks ending November 4 to 184 in the four weeks ending December 2, were as many as 270, compared with a ten-years’ average for the same period of the year of 225·0. These 270 deaths included 202 from bronchitis (average = 166·8) and 26 from pneumonia (average = 28·0).

On Saturday, December 30, the returns of patients suffering from the chief epidemic diseases in the principal hospitals of Dublin showed the following results—smallpox, 0; measles, 0; scarlet fever, 21; typhus, 74; typhoid, 23; pneumonia, 9. Scarlet fever and typhus are apparently increasingly prevalent.

The mean temperature of the four weeks was 37·2° in Dublin, 39·6° in Belfast, 41·1° in Cork, 40·4° at Greenwich, and 33·5° in Edinburgh.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of December, 1882.*

Mean Height of Barometer,	-	-	-	29·641 inches.
Maximal Height of Barometer (at 9 p.m. of 19th),	-	-	-	30·156 „
Minimal Height of Barometer (at 9 p.m. of 3rd),	-	-	-	29·075 „
Mean Dry-bulb Temperature,	-	-	-	37·7°.
Mean Wet-bulb Temperature,	-	-	-	36·7°.
Mean Dew-point Temperature,	-	-	-	35·2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·207 inch.
Mean Humidity,	-	-	-	91·1 per cent.
Highest Temperature in Shade (on 27th),	-	-	-	56·5°.
Lowest Temperature in Shade (on 14th),	-	-	-	13·3°.
Lowest Temperature on Grass (Radiation) (on 15th),	-	-	-	12·0°.
Mean Amount of Cloud,	-	-	-	64·2 per cent.
Rainfall (on 21 days),	-	-	-	3·782 inches.
Greatest Daily Rainfall (on 17th),	-	-	-	·584 inch.
General Directions of Wind,	-	-	-	W. and S.E.

Remarks.

A cold month, with great extremes of temperature, the range amounting to 43·2°, the rainfall (3·782 inches) and rainy days (21) both being decidedly above their respective averages (2·545 inches and 16·8 rainy days). A period of excessive cold commenced on the 5th and lasted until the 15th, on the morning of which day a very sudden rise of temperature occurred. After a week's mild weather a second but less intense cold period set in, giving place on Christmas Day to unusual warmth, which continued to the close of the month, with a brief intermission on the 30th. This warm weather restored the balance of temperature to a great extent, so that the mean of the month (37·7°) fell only about 3° below the average of the previous seventeen years.

On Sunday, the 3rd, a deep atmospherical depression appeared off the N. of Scotland, whence it travelled south-eastwards along the E. coasts of Scotland and England. In the rear of the centre, which was still found between Norfolk and Holland on the morning of the 6th, strong E. and N.E. winds sprang up, bringing severe cold and heavy falls of snow and hail. In Dublin and its vicinity snow, hail, and "Graupel" (or soft hail) fell heavily on the 6th and 7th, covering the ground to the depth of several inches. Inland there was no snow, but the frost was very intense. From Dublin the Transit of Venus on the afternoon of Wednesday, the 6th, was observed under great difficulties owing to the presence of clouds and snow; but inland a cloudless sky favoured those who watched for this very rare astronomical event. Keen frost followed

the snowstorm, and in Dublin the highest temperature on the 9th was only $26\cdot7^{\circ}$. On this day a vapour fog prevailed throughout, and a thick rime was deposited on the trees and shrubs. In the eastern part of the succeeding week the severity of the weather in Ireland and Scotland was extraordinary, while it was comparatively mild over the greater part of England. In Dublin temperature became very low under a clear sky and over the snow-covered ground. Frozen sleet and snow fell on the 11th, and next morning the frost returned, culminating on the 14th, when the maximal temperature in the city was $19\cdot5^{\circ}$. At 4 p.m. of this day the thermometer stood at $16\cdot0^{\circ}$; it then fell slowly to $13\cdot3^{\circ}$ at 9 p.m.—the lowest temperature recorded for many years. The minimum in the Botanic Gardens, Glasnevin, was 11° , while that at the Ordnance Survey Office, Phoenix Park, was $6\cdot8^{\circ}$. In the course of the night a sudden change occurred—the sky became overcast, a S.E. breeze sprang up, and the frost gave way so rapidly as to cause the phenomenon of “Rauh-frost,” or “silver thaw,” buildings becoming coated with a thick deposit of hoar-frost. On the morning of this day the thermometer fell to 6° at Leith and Aberdeen, but as rapid and complete a thaw as that experienced in Dublin speedily followed. Comparatively mild, fine-winter weather ensued with moderate or fresh S. to W. winds. On the 17th, indeed, a very heavy fall of rain occurred. On Christmas Day the weather was dark, wet and gloomy in the extreme, and temperature fell and rose strangely as cold and warm currents of air swayed backwards and forwards from N. to S. and S. to N. The warm current gradually displaced the cold air, and dull, wet weather was the consequence. So marked was the contrast of temperature between the middle and end of the month that the mean temperature ($46\cdot1^{\circ}$) of the week ending Saturday, the 30th, was $18\cdot9^{\circ}$ above that ($27\cdot2^{\circ}$) of the week ending Saturday, the 16th.

In Dublin snow fell on the 6th, 7th, 8th, and 11th; hail on the 5th, 6th, 7th, and 15th; ice crystals on the 11th. The atmosphere was foggy on as many as fifteen days. There was a “silver thaw” on the 15th. A lunar corona was seen on the 22nd, a lunar halo on the 23rd, and a lunar rainbow at 11 p.m. of the 28th.

RAINFALL IN 1882,

At 40, Fitzwilliam-square, West, Dublin.

The rainfall was about three inches in excess of the average of the seventeen years, 1865–81, inclusive—namely, $28\cdot194$ inches. The rainy days—or days on which not less than $\cdot01$ inch of rain (one hundredth of an inch) was measured—numbered 227, or far in excess of the average number of rainy days ($193\cdot5$) in the previous seventeen years..

TABLE.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
	Inches	Depth	Date	
January, - - -	1.476	.382	2nd	17
February, - - -	1.862	.860	28th	16
March, - - -	2.260	.611	25th	17
April, - - -	3.526	.803	14th	20
May, - - -	1.533	.391	23rd	16
June, - - -	2.384	.386	23rd	25
July, - - -	3.722	.439	1st	25
August, - - -	1.872	.563	31st	11
September, - - -	2.619	.831	24th	15
October, - - -	2.804	.544	26th	20
November, - - -	3.344	.408	3rd	24
December, - - -	3.782	.584	17th	21
Total, - - -	31.184	—	—	227

J. W. MOORE, M.D., F.M.S.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

TREATMENT OF PRURITUS SENILIS.

DR. JAMES C. WHITE (in the *Boston Med. and Surg. Journal* for Nov. 23rd, 1882) gives several very useful hints on this subject. He says:—The treatment of pruritus senilis does not differ from that in other forms of this neurosis of the skin. The varied list of anti-pruritics offers not a few remedies which, judiciously applied, are capable of controlling in some measure the subjective symptoms of the disease. Their action is always temporary, however, and at times limited to furnishing only momentary relief. Even with this restricted power the patient must often depend upon their constant or intermittent use for his comfort and ability to withstand his sufferings. The use of such applications is often determined by the secondary changes in the skin, the result of long continued scratching before treatment is begun. All grades of eczema may demand their appropriate care before the case is reduced to one of simple pruritus, and sometimes mechanical aids to self-restraint are absolutely necessary in order to obtain any degree of control over it. There are numerous

formulæ in use for the relief of the constant peripheral nerve agitation attendant upon this disease. The most useful formulæ are, perhaps, the following:—1. \mathcal{R} Carbolised and camphorated cosmoline, equal parts. 2. \mathcal{R} Acid. carbolic, \mathfrak{z} ss, glycerin. \mathfrak{z} j, aq. calcis, \mathfrak{z} viiij. 3. \mathcal{R} Ol. cadin. \mathfrak{z} ss, adipis \mathfrak{z} j. 4. \mathcal{R} Ol. cadin. \mathfrak{z} j, sapon. virid., glycerin. $\bar{a}\bar{a}$ \mathfrak{z} ss, alcohol \mathfrak{z} vj. 5. \mathcal{R} Chloral hydr. \mathfrak{z} j, aq. camph., alcohol, $\bar{a}\bar{a}$ \mathfrak{z} iv. 6. \mathcal{R} Chloral hydr. \mathfrak{z} j, acid carbol. \mathfrak{z} ss, glycerin., \mathfrak{z} ss, aquæ, alcohol, $\bar{a}\bar{a}$ \mathfrak{z} iv. 7. \mathcal{R} Chloral hydr., camphor., $\bar{a}\bar{a}$ \mathfrak{z} j, glycerin., \mathfrak{z} ss. 8. \mathcal{R} Hydrarg. bichlor. gr. viii., acid carbol. \mathfrak{z} ss, aquæ \mathfrak{z} viiij., for restricted use. 9. \mathcal{R} Acid. hydrocyan. dil. \mathfrak{z} j, emuls. amygd. \mathfrak{z} viiij. They are to be applied in the evening as early as practicable in anticipation of the nocturnal exacerbation, at all events at bed-time, and are to be repeated through the night or at other times, as freely and frequently as may be required to relieve the attacks of itching, without producing so much irritation of the skin that they may not be used as freely at the next application. They are never to be rubbed on or in, but sopped or smeared on so gently as not to excite the cutaneous nerves. If the surface should be over-stimulated by them some soothing ointment, as “cold cream” or a very mild oxide of zinc salve (gr. v. to \mathfrak{z} j), may be applied to such parts in the morning. In order that any of these formulæ may not lose their effect by prolonged employment, it is well to change from one to another after a time. It may often be necessary to try several of them before that best adapted to the individual case is found. If, as some practitioners think, the internal administration of remedies be useful, addressed to the nervous system, for the purpose of blunting or benumbing the peripheral nerves, chloral and the bromides will be found most effective, but it is not thought advisable by some, as they have to be given in increasing quantities to control the sufferings of the patient. No stimulating dietary should be allowed, and drinks should be taken lukewarm, never hot. The thinnest old linen or cotton garments should be worn next the skin beneath the ordinary woollen shirts and drawers.

J. K. I.

ALCOHOLIC TREATMENT OF PNEUMONIA.

THE various methods of treating disease by medicinal or other agencies have their opponents as well as supporters, and perhaps no example could be chosen which would better illustrate this fact than pneumonia. In a lecture delivered in the Hôpital St. Antoine, dealing with the alcoholic treatment of pneumonia, Professor Dujardin-Beaumetz gives his opinion, the result of several years study of the subject, substantially as follows:—Alcohol has a three-fold action, as food, as medicine restraining waste, and as a tonic. The first is one of the most disputed points in the physiological action of this substance, some (among whom are Liebig, Bouchardat, and Landras) allege that the larger part of the alcohol ingested is burned

in the economy, while others (represented by Perrin, Lallemand, and Duroy) claim that alcohol undergoes no modification in the tissues. Professor Dujardin, however, is of opinion that it is impossible to furnish a direct experimental solution of the dilemma. Jaillet, in his "Interne in Pharmacy," has demonstrated that alcohol, in the presence of hæmoglobin and oxygen, is changed into aldehyde and then into acetic acid; this reaction, which does take place in the laboratory, should also take place when alcohol is introduced into the economy and passes into the blood. Alcohol is then a food, and acts as a food, by giving force and restraining waste. In order to undergo its changes in the system it takes its oxygen from the blood, and in thus withdrawing from the blood the oxygen necessary to change it into acetic acid alcohol diminishes the combustions of the economy, and it is probably in this way that it depresses the temperature in fever patients. Thus it is easily understood how alcohol is of use in cases of pneumonia. It supports the vital forces, braces up the tissues, and instead of augmenting the temperature lowers it.—*Boston Med. and Surg. Jour.*, Nov. 23, 1882.

J. K. I.

THE TREATMENT OF EMPYEMA.

IN an elaborate article on this subject in the *Amer. Jour. of the Med. Sciences* for Oct., 1882, Dr. William C. Dabney draws the following conclusions:—1. "Medicinal" treatment, as it has been called—namely, treatment without operation—occasionally gives favourable results, but is not advisable, inasmuch as cases so treated are liable to terminate in one or other of the following ways: *a*, sudden death; *b*, exhaustion; *c*, suffocation; *d*, phthisis; *e*, septicæmia; *f*, calcareous degeneration of the pus; *g*, secondary pneumonia and gangrene of the lung; *h*, peritonitis from the bursting of the empyema into the peritoneal cavity; *i*, amyloid degeneration of the liver, kidneys, &c. 2. Aspiration has given good results in the case of children, and should be tried in them before the radical operation is resorted to. Aspiration and immediate washing out of the pleural cavity through the aspirator (Kashimura's treatment) has not been used sufficiently often for any conclusion as to its efficacy to be reached. 3. Free incision into the pleural cavity is usually necessary; and the best point for such an incision, when only one is made, is at the lowest point of the purulent collection, and directly below the angle of the scapula. Costal resection is to be avoided if possible, especially in children. 4. Continuous is preferable to intermittent drainage, because, *a*, the danger of absorption is thereby lessened; *b*, there is usually less danger of irritative fever; *c*, the empyemic cavity is placed in a better position for healing. Continuous drainage is best effected by a drainage-tube. 5. Through drainage is only advisable in cases where the discharge is very fœtid, and where a single opening has

proved insufficient. 6. The thoracic opening should not be allowed to close, if more than two drachms of pus be discharged daily. 7. The danger of sudden death during thoracentesis or injection of the pleural cavity, when proper care is used, is so slight that it may practically be disregarded; but when injections are used, especial care should be taken to see that they have a free outflow. 8. Simple injections of pure water are often sufficient, but compound tincture of iodine, one part to four of water, is devoid of danger, and hastens recovery. This will usually check foetor also; but if it do not, salicylic acid or permanganate of potash in one-half or one per cent. solution may be employed. Carbolic acid is dangerous, as is boracic acid also. 9. Listerism would probably be advisable in city or hospital practice, but is of doubtful efficacy in the country, and under no circumstances should it be allowed to interfere with thorough drainage.—*Lond. Med. Record*, Jan., 1883.

SOLID PNEUMONIA.

PETRONE states (*Lo Sperimentale*, Nov., 1882) that solid pneumonia was established as a separate variety of pneumonia by M. Grancher in 1878 (*Gaz. Méd. de Paris*). Six cases are recorded here: one by the author, the others by Grancher, Brissaud, Beaurmann, and Leroux. In physical signs the cases counterfeit pleurisy with large effusion. There are absolute dulness, and total extinction of vocal fremitus, of vocal resonance, and of respiratory sounds. After death the bronchi are found filled with a solid, fibrinous, and sometimes fibrillated material, like diphtheritic membrane, slightly adherent to the mucous membrane. The diagnosis is more or less uncertain. But in cases of doubt an exploratory puncture may, owing to its harmlessness, always be tried. Although many cases have been recorded (as M. Grancher has recognised) by clinical and by pathological observers, this variety of pneumonia has not yet found its way into the text-books.—*Lond. Med. Record*, Jan., 1883.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

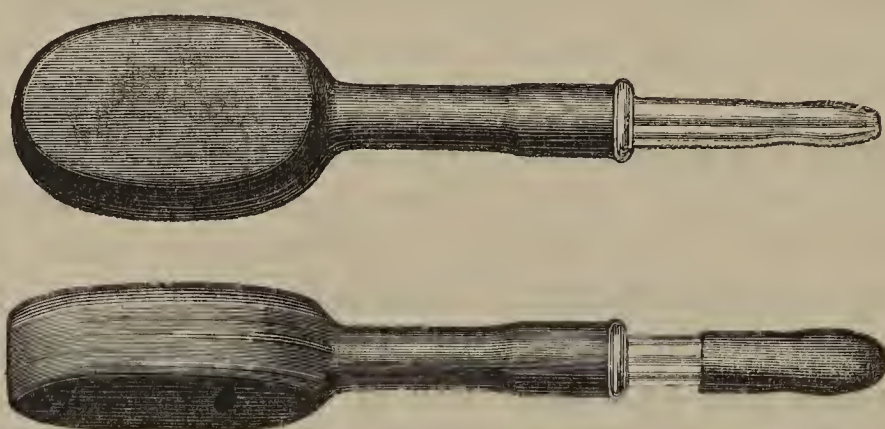
A New Urethral Syringe.

MR. BALMANNO SQUIRE has recently devised^a a neat little instrument for injecting the urethra. It is figured in the illustration (taken from a photograph), where, however, it is not represented of full size, the syringe being really four inches long over all, whereas in the illustration it is only two inches and three-quarters long. The upper of the two woodcuts shows a nearly full-faced view, while the lower one shows nearly a side or edge-view. The syringe consists of an india-rubber

^a See *Med. Times and Gazette*, June 10, 1882.

body, from one end of which proceeds an india-rubber tube, terminated by a glass nozzle. The body is of an elliptical form with flattened sides.

The two flattened sides of the body are each of them absolutely rigid, this rigidity being attained by the interposition of a thin but stiff iron plate in the substance of the rubber. The circumferential wall of the body which unites the two flattened sides to one another is wholly elastic, being composed only of rubber, and it has a slight outward bulge, so that when the rigid sides are compressed together, it yields, bulging outwards in all directions, and thus permits the rigid sides to be brought into complete contact with one another when compressed. The rubber of this circumferential wall is, however, sufficiently thick to be resilient, so that when pressure is released the syringe springs back accurately to its proper shape and capacity.



The advantages of this syringe are as follows:—

It is easily worked with one hand; the other hand being left free to close the mouth of the urethra around the nozzle.

It can be *completely* emptied (by pressing the sides together), and *completely* filled (by relaxing the pressure). Moreover, its fluid capacity is precisely that which is necessary to distend fully, but not unduly, the male urethra with fluid. Consequently, no air-bubbles can be injected by it into the urethra, and no fluid into the bladder.

Its flat shape and small size enable it to be carried easily in the waistcoat pocket. A supply of liquid, enough for one injection, may be carried in the syringe.

The nozzle is provided with an india-rubber cap which takes off and on; so that the syringe, filled with a supply of solution, may be carried safely in the waistcoat pocket. The cap is shown *in situ* in the lower of the two woodcuts.

The instrument, with full directions for using it, may be obtained at a trifling cost, of the manufacturers, Messrs. J. G. Ingram & Son, the India-rubber Works, Hackney Wick, London.

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PART I. ORIGINAL COMMUNICATIONS.

ART. V.—*The Theory of a Central Lesion in Exophthalmic Goître.*
By WM. A. FITZGERALD, A.B., M.D., Univ. Dubl.

WITHIN the last few years considerable additions have been made by Continental writers to the already very bulky literature which treats of the pathology of Graves' or Basedow's disease. The fact that these additions have as yet, so far as I am aware, attracted but little attention in this country must be my excuse for endeavouring to re-open a subject on which so much has already been written.

"A theory of the disease," says Eulenburg,^a "to deserve the name, ought to be able to derive all the symptoms, or at least the three cardinal ones, from a common source." And inasmuch as he seems indisposed, as do also the majority of writers, to consider it as an affection of the central nervous system, it is not at all surprising to find him expressing a fear that "we shall be obliged at the best to content ourselves with a somewhat unsatisfactory result." For it will be very generally admitted that there are great difficulties in explaining the complex collection of symptoms which go to form Graves' disease by what I may term the sympathetic theory, and that such is the case is shown by the vast amount of discussion which the subject has occasioned, and by the fact that many writers have at various times been led to suggest, some vaguely and others more precisely, a central origin of the affection. Still it is only quite recently that a precise and definite

^a Ziemssen's Cyclopædia. Eng. edition. Vol. 14.

central theory, capable of satisfactorily explaining the principal symptoms, has been put forward by Professor Sattler^a (whose admirable article contains probably almost everything that is known of the subject), and by Professor W. Filehne,^b who has brought the experimental method to bear on the investigation.

It may perhaps lead to a clearer understanding of this somewhat complicated subject if, before considering the conclusions arrived at by these last-named authors, I should briefly allude to the principal and most constant symptoms of the affection, and endeavour to point out the difficulties involved by the theories of earlier writers.

That the enlargement of the thyroid gland is due to dilatation of its vessels is probably universally admitted, although of course in a late stage the long-continued hyperæmia may have given rise to hypertrophy of the gland tissue. In a few cases there have been great increase of connective tissue, and even cystic degeneration, but such alterations are clearly effects of the disease and not any integral portion of it. There are many proofs that the exophthalmos is also primarily due to hyperæmia—for instance, the vascular bruit often present; the occasional disappearance of the protrusion after death, and the possibility of lessening it during life by pressure on the globes; the extremely rapid onset of the symptom which has been occasionally noticed (as in a case recorded by Trousseau,^c in which marked protrusion occurred in the course of a single night); and, lastly, the fact that Boddaert^d has produced in guinea-pigs and rabbits a considerable amount of exophthalmos, lasting several days, by tying the external and internal jugulars on both sides, and simultaneously dividing both cervical sympathetics to facilitate dilatation of the vessels. In most cases which have been examined *post mortem* there has been found hypertrophy of the orbital fat, but this must be considered, like the structural alterations of the thyroid, as a result of the long-continued hyperæmia.

The goître and the exophthalmos, then, as well as the enlarge-

^a Graefe-Saemisch Handbuch. Bd. VI., s. 949. Die Basedow'sche Krankheit. 1880.

^b Zur Pathogenese der Basedow'schen Krankheit. Sitzungsber. der physic. Med. Societät zu Erlangen. 14 Juli, 1879. S. 177.

^c Clinique Médicale. Tome II., p. 587.

^d Mémoire lu au congrès de Bruxelles. Gazette Hebdom., 1875. No. 41, p. 645. By tying the thyroïdal veins in addition he produced a distinct enlargement of the thyroid gland.

ment and pulsation of the carotids, and of the central arteries of the retinae, have been almost universally attributed to paralysis of the vasomotor nerves which run in the cervical sympathetic. The increased cardiac action has been generally explained by the assumption of a permanent irritation of the excito-motor nerves of the heart, which also run in the cervical sympathetic, and here at once the difficulty arises that whereas some of the symptoms—namely, the goître and the exophthalmos—are referred to paralysis, the third cardinal symptom is accounted for by the exactly opposite condition.

Various attempts have been made to explain away this obvious contradiction. Thus Eulenburg and Guttmann,^a in their work on the pathology of the sympathetic, say—"If we now suppose that Graves' disease arises from an affection of the nerve centres, we may well conceive the centre for the oculo-pupillary fibres as in a condition of irritation, while, on the contrary, the centre for the vasomotor fibres is in a state of paralysis. Even though we regarded the cause of exophthalmic goître as not central but peripheral, and situated in the cervical sympathetic, there is nothing forced in the above supposition that the oculo-pupillary fibres are in a condition of irritation, and the vasomotor fibres in a state of paralysis." They instance in support of this assertion the well-known facts that in neuritis there may be spasm and anæsthesia, or paralysis and hyperæsthesia, and, in the same fibres even, anæsthesia dolorosa, or paralysis with slight spasmodic movements.

They here allude to the theory of the disease put forward by Geigel,^b who, taking advantage of Claude Bernard's discovery that the oculo-pupillary and the vasomotor fibres of the cervical sympathetic are each connected with separate centres in the cervical region of the spinal cord, situated at different levels, assumed lesions of these centres, and considered the vasomotor as being in a state of paralysis, and the oculo-pupillary in a state of irritation. Geigel's theory was based on a *post mortem* in which there was found obliteration of the central canal of the spinal cord, with sclerosis of the nerve substance in its immediate neighbourhood, especially posteriorly.

Benedict^c again has endeavoured to account for the dilatation of

^a The Sympathetic System of Nerves. Eng. translation.

^b Würzburg. med. Wochenschrift. VII., s. 70. 1866. Referred to by Sattler.

^c Wiener med. Presse. 1869. No. 52, s. 1225.

the vessels, not by paralysis but by a condition of permanent irritation. He suggested a spasm of the muscular fibres which run longitudinally in and between the coats of the arteries, which would cause a shortening of the vessels and simultaneously an increase in their calibre. Founding his theory also on the result of Geigel's *post mortem*, he says:— "This disease is thus probably a central vasomotor irritation-neurosis, which is caused by swelling of the gray substance in the neighbourhood of the central canal at the cervical enlargement." The extreme tortuosity of the thyroïdal arteries, so constantly noticed, seems sufficient to dispose of this idea.

Friedreich,^a on the other hand, has suggested that the increased cardiac action is due to paralysis of the vasomotor fibres going to the heart, which causes dilatation of the coronary arteries, and an increased flow of blood to the muscular tissue of that organ, thus inducing an excitement of the ganglia which preside over its rhythmic contractions.

It is certainly remarkable that, in endeavouring to account for the cardiac symptoms, so little attention should have been paid to the possibility of impairment of the inhibitory function of the pneumogastric nerves. This explanation has, however, not been altogether wanting, for Handfield Jones,^b in a paper read before the Medical and Chirurgical Society, attributed the palpitation to paresis of the vagi, as did also Habershon^c at a later period.

The adherents of the irritation theory have put forward another explanation of the exophthalmos—namely, that it is due to a spasm of the musculus orbitalis of Müller, first described in 1858. It consists of unstriped fibres embedded in the periosteal tissue in the neighbourhood of the spheno-maxillary fissure, and is innervated by the sympathetic. In most mammals it has a definite anatomical importance, as it helps to shut off the orbital cavity from the temporal fossa; but in man and monkeys, whose orbits possess a bony wall in this situation, it loses its significance, and is reduced to an exceedingly rudimentary condition.^d It is this muscle which causes the protrusion of the eyeball in Claude Bernard's well-known experiment of galvanising the previously divided sympathetic in the neck; but in man, owing to its extremely insignificant

^a *Krankheiten des Herzens*. Erlangen. 2 Aufl., s. 307. 1867. Referred to by Sattler.

^b *Lancet*. 1860. Vol. II., p. 562.

^c *Lumleian Lectures*. Brit. Med. Journ. 1876. Vol. I., p. 497.

^d See Graefe-Saemisch Handbuch. Bd. I., s. 13, and Bd. II., s. 165.

size, it seems quite incapable of affecting the position of the globe,^a and the experiments of Wagner and Müller^b have shown that in recently decapitated criminals stimulation of the sympathetic is powerless to cause any exophthalmos.

Omitting the consideration of various conditions which, although frequently and some even usually present, cannot be ranked among the cardinal symptoms of the disease—such as anæmia, chlorosis, menstrual derangements, vomiting, diarrhœa, mental disorders, &c.—there still remain two phenomena which are among the most constant symptoms, and which are therefore of extreme value from a diagnostic point of view. I allude to the symptoms with which the names of von Graefe^c and Stellwag^d are associated, and which, although capable of a ready explanation by the assumption of a central lesion, have been almost invariably attributed to spasm of the sympathetic. Indeed it is probable that they have done more than almost anything else to perpetuate the sympathetic theory. Thus Eulenburg and Guttmann (l. c.), while they admit that spasm of the sympathetic cannot cause the exophthalmos, consider that Graefe's sign "unquestionably indicates the participation of the sympathetic in the production of the disease."

Graefe's sign consists of *an impairment of the consensual movement of the upper eyelid in association with the eyeball*. Thus normally when the globe is rotated downwards, as in looking down, the upper lid follows it, preserving its relative situation to the cornea. The exact explanation of this phenomenon has possibly still to be brought forward; but one thing is certain—namely, that in order to permit of the descent of the lid, as also in the action of involuntary winking, an inhibition of the levator palpebræ is necessary.^e In Graves' disease, however, this descent of the upper lid on looking down is, in the great majority of cases, either in part or entirely wanting, so that a zone of sclerotic becomes visible above

^a It is right to mention that Eulenburg (l. c.) has suggested that the production of exophthalmos may be facilitated by the straight muscles being in a condition of fatty degeneration. It is no doubt true that such a condition has been found *post mortem* in one or two instances, but in accounting for the protrusion in ordinary cases, in which it is frequently most rapid in its occurrence, and accompanied by no signs of weakness of the ocular muscles, such an explanation seems totally inadmissible.

^b Referred to by Sattler, l. c., s. 987.

^c Deutsche Klinik. 1864. No. 16, s. 158.

^d Wiener med. Jahrbücher. XVII., s. 25. 1869.

^e Different opinions as to the mechanism by which this inhibition is effected will be found expressed by W. R. Gowers in Trans. Med. and Chirurg. Soc., 1879; and by Lang and Fitzgerald in Trans. Ophthalm. Soc., Vol. II., p. 217.

the cornea when the eyeball is rotated downwards. That this is not due to the protrusion of the globe is shown by the facts that it is one of the earliest symptoms of the affection, appearing often when the exophthalmos is still absent, or only present in a slight degree; that it may disappear while the protrusion still continues, and that in proptosis from other causes, such as tumour or inflammatory exudation in the orbit, the symptom is entirely wanting. And a case has been recorded by Mooren^a in which, although the exophthalmos was unilateral, Graefe's sign was present on both sides.

What is known as Stellwag's sign consists of *an abnormal widening of the palpebral aperture, due to retraction of the upper lid, and of incompleteness and diminished frequency of the act of involuntary winking.*

It is to this gaping of the palpebral aperture that the remarkable and truly characteristic aspect of the patient is due rather than to the exophthalmos, and so striking is the symptom that it did not fail to attract the notice of earlier writers, but it is to Stellwag that we are indebted for having first pointed out its constancy and its consequent value in diagnosis. These eyelid phenomena have usually been attributed to spasm of the unstriated muscular fibres which were first described by Müller as occurring in the upper and lower lids—in other words, to permanent irritation of the sympathetic, but Stellwag did not accept this explanation.

In endeavouring to account for these various symptoms there is one fact which it seems impossible to reconcile with the theory of a lesion of the cervical sympathetic, whether irritative or paralytic in character—namely, the extreme rarity of any affection of the pupils. I am aware that some writers have described mydriasis as a frequent symptom in Graves' disease, while a few cases of myosis have been recorded, but such is not the generally expressed opinion, especially among ophthalmologists. Thus Sattler says that “in the preponderating majority of cases no particular alteration of the pupils is to be noticed;” and Graefe, in about two

^a Ophthalm. Mittheilungen aus dem Jahre, 1873, s. 15. On the other hand C. E. Fitzgerald has published four cases in which with unilateral exophthalmos Graefe's sign was also unilateral (Trans. Ophthalm. Soc., Vol. II., p. 233); and in I. B. Yeo's case with unilateral exophthalmos Stellwag's sign was limited to that side (Brit. Med. Journ., 1877, Vol. I., p. 320); and in a case described by Lauder Brunton, Graefe's sign was limited to the right side—that on which the protrusion was most marked (St. Barth. Hosp. Rep., Vol. X., p. 253).

hundred cases, never observed mydriasis. And Eulenburg (a physician, be it remembered, and not an ophthalmic specialist) has endeavoured to account for the absence of this symptom by pointing out that in those autopsies which have shown lesions of the sympathetic it has usually been the inferior cervical ganglion that has been affected. This explanation seems rather an unfortunate one, for in cases of pressure on the sympathetic, at or below the level of the ganglion in question, pupillary symptoms are commonly noticed—as, for instance, in intrathoracic aneurism.

With regard to the assumption of a state of permanent and continuous irritation of the sympathetic, it would appear decidedly questionable whether such a condition is even possible, not to say probable. Eulenburg and Guttman indeed admit that such a condition of permanent irritation cannot be assumed as would be necessary in order to account for the cardiac symptoms, and on this point I shall quote the words of Sattler^a—“If now the explanation of Basedow’s disease as an affection of the sympathetic be still maintained, it is impossible, as we have seen, to avoid the assumption of a permanent condition of irritation of certain groups of sympathetic nerve-fibres continuing for months or even years. But this would be to maintain the existence of a condition for which we possess no clearly-proved physiological analogy. Conditions of nervous irritation give way sooner or later, intermittently or permanently, to a state of rest, or even to the opposite condition, that of relaxation or exhaustion. Now, even if it be the rule in Basedow’s disease to find considerable variations in the intensity of the symptoms, yet they never pass over into the opposite state, and especially is this the case with those which, according to the views of authors, must be regarded as irritation symptoms; the pulse in typical cases never falls below 90 or 100; the abnormal position of the lids never gives place to ptosis, nor even attains the normal until the symptom disappears altogether.”

The assumption of paralysis of the sympathetic still remains to be considered, and here we are at once confronted by a decided difficulty—namely, that the two cardinal symptoms, the goître and the exophthalmos, which it is endeavoured to refer to that condition, have never been produced, so far as I am aware, by experimental section of the sympathetic cord, although there is abundant proof that enlargement of the thyroid gland is possible

^a L. c. S. 992.

in animals;^a and in clinical cases of paralysis of the cervical sympathetic, although the pupillary symptoms are well marked, as are also, especially at first, the vasomotor phenomena, both goître and exophthalmos are conspicuous by their absence.

The theory of the disease advanced by Sattler disposes of these various difficulties, and will probably sooner or later, meet with very general acceptance. He assumes a lesion of those circumscribed portions of the vasomotor centre^b (or possibly of a still more central region of the brain) which preside over the vasomotor nerves of the thyroid gland, and of the intra-orbital tissues, and he infers from the very great constancy with which the two symptoms of goître and exophthalmos are found combined, that the portions in question must be situated exceedingly close together. The cardiac symptoms he ascribes to lesion of the cardio-inhibitory centre^c for the vagus, and in explaining Graefe's sign as a central phenomenon he uses the following words (p. 996):—"There is no doubt whatever that the movements of the lids in association with the raising and lowering of the level of fixation—that is to say, the consensual action of the levator and orbicularis on the one hand, and of the ocular muscles which rotate the eyeball about a horizontal axis on the other—are presided over by a definite coordination-centre, just as much as are the associated movements of both eyes."^d The remaining lid-symptoms were ascribed by

^a Baillarger (*Union Médicale*, 1862, p. 116) has shown that in districts in which goître is endemic domestic animals are not exempt from it. This applies particularly to dogs and horses, but in the most special and remarkable manner to mules. Thus, in one stable examined, 19 out of 20 and in another 23 out of 30 mules presented distinct enlargement of the thyroid gland. With respect to rabbits the reader is referred to Boddaert's experiment before alluded to.

^b "The position of the vasomotor centre appears, from the researches of Ludwig and Owsjannikow, to be situated in the gray matter on each side of the median line of the floor of the fourth ventricle, extending from about 4 mm. in advance of the beak of the calamus scriptorius to within 1 mm. posterior to the corpora quadrigemina. Section above this latter point does not cause dilatation of the blood-vessels, while section posterior to the lower margin of the centre causes their complete and permanent paralysis."—Ferrier, *Functions of the Brain*, 1876, p. 30.

^c Michael Foster says (*Textbook of Phys.*, p. 126):—"Hence the cardio-inhibitory centre might itself be inhibited by impulses reaching it from various quarters—in other words, the beat of heart might be quickened by the lessening of the normal action of its inhibitory centre in the medulla. It is, in fact, probable that many cases of quickening of the heart's beat are produced in this way, but the matter requires further investigation."

^d That the orbicularis takes any part in the movements of the eyelids in association with the eyes is exceedingly doubtful. All that seems necessary for the descent of the upper lid is an inhibition of the levator palpebræ, and this is probably brought

Stellwag to a lesion of those reflex centres which are set in action by stimuli from the retina, and from the sensitive nerves of the cornea and conjunctiva, and in this opinion Sattler coincides. He says (p. 996):—"In an analogous manner are to be explained the two other lid-symptoms, the increased gaping of the palpebral aperture, as well as the diminished frequency and incomplete character of the act of involuntary winking. It is well known that the width of the palpebral aperture, and also the completeness and number of the involuntary descents of the upper lid occurring in a given time, stand in a reflex relation on the one hand to the amount of light which stimulates the retina, and on the other to the amount of stimulation applied to the sensitive nerves of the anterior surface of the globe, which latter is of course under normal conditions very slight. And this is illustrated in the most striking manner by the narrowing of the aperture which invariably occurs on exposure to dazzling light, by the characteristic and involuntary position of the lids which is often noticed with corneal nebulae, by the marked sinking of the upper lid which accompanies even the slightest irritation of the conjunctiva or cornea, and so on, and again by the abnormal width of the aperture which impresses such a peculiar character on the gaze of amaurotic patients. There clearly exists here a similar reflex relation to that between the size of the pupil and the amount of light stimulating the retina."

He sums up as follows (p. 999):—"We have now seen that the essential, and to a certain extent constant, symptoms which make up the comprehensive picture of Basedow's disease, and which show themselves in such various and widely distributed organs, can be explained in a uniform manner *by the assumption of a lesion of certain centres*, which leads to the impairment or abolition of the functions presided over by these centres, and in fact, more precisely expressed, *of a lesion implicating the tone in the vagus centre which regulates the cardiac movements, or the peripheral but still unmixed nerve-paths proceeding from it; further, the vasomotor centres for definite regions of the body, especially of the head and neck, and finally the centres for certain coordinated movements and reflex actions.*"

[To be concluded.]

about by the action of an associated centre for looking down, which simultaneously causes contraction of the muscles which rotate the eyeball downwards. See note to page 205.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Spirillum Fever, as seen in Western India. By. H. VANDYKE CARTER, M.D., Lond.; Surgeon-Major I.M.D; Surgeon in Charge of the Goculdas Tejpal Hospital; late Officiating Principal and Professor of Medicine, Grant College; and First Physician, Jamsetjee Jejeebhoy Hospital, Bombay. London: J. & A. Churchill. 1882. Pp. 449.

THIS is a formidable book for reader or reviewer—likely to impress either with the truth of at least one Hippocratic maxim. If one disease requires for its elucidation four hundred and fifty pages, in smaller type than we are accustomed to in modern medical octavos, how very short our life appears! how very long, not to say tedious, our art must be! In this case even the method of obtaining knowledge of the contents of a book to which reviewers (of course non-medical) are sometimes suspected of resorting—namely, cutting the leaves and smelling the knife—would not be unlaborious. We, being conscientious, have done much more than this, and shall place the results of our toil before our readers as succinctly as we can.

Spirillum Fever is the name given by Dr. Carter to the disease heretofore known as Famine Fever and Relapsing Fever. A severe epidemic of this disease occurred in Bombay, which our author had ample opportunity of studying during its acme and decline, from April, 1877, to March, 1880. His experience, indeed, was painfully personal as well as scientific, Dr. Carter having suffered from repeated attacks of the fever, the last of which cut short his researches prematurely, compelling him to leave India. The existence of the disease in Western India had not previously been recognised, nor its dependence on, or association with, the presence of a certain parasitic organism in the blood. It was in 1877 that the mortality due to this fever, both in the districts of the Deccan and in Bombay, attained its maximum. The total death-rate in the city, calculated upon the census population of 1872, was 52 per mille, that of the previous year having been a little over 32.

Of 33,511 deaths, the largest number—12,832—were attributed to “fever.” From 1877 the disease declined, until in 1880 and 1881 only traces of the epidemic, surviving the famine to which its origin had been due, remained—such survival being conformable with European experience of the disease. As might be expected, the visitation was not restricted to the Western Presidency. In the Punjaub relapsing fever was distinctly recognised in 1876–77, and the mortality from this cause was very great in 1878. So, too, in the North-Western Provinces and Oudh, in the Central Provinces, and in Bengal. In Madras, however, though famine prevailed to a terrible extent, famine fever was unknown. There is, therefore, no necessary connexion between the two scourges, or, at least, famine does not necessarily produce relapsing fever. We should have supposed that this was clear from the Irish experience of 1846–50, and we were surprised to read that “it is understood that the Irish fever was mainly of the relapsing kind.” It is certain that Dr. Graves did not think so. He does not, in his *Clinical Lectures*, when treating of the fever following the Irish famine, even mention the subject of relapses, which he could not have failed to observe if they existed.

The special characteristic of the spirillum fever is “its tendency to recur at tolerably regular intervals, its successive febrile repetitions becoming gradually less sustained, and the intercurrent non-febrile stages more prolonged.” Relapses, especially the later ones, vary in intensity. There may be no relapse at all, but generally there is one. Occasionally there is a second, more rarely a third or fourth. During the pyrexial period the temperature is high, the pulse quick, pains in the body are severe, and “the viscera in the upper abdominal zone” are implicated. Spirilla in the blood, at first few, increase in number during the fever up to the acme, when pyrexia and spirilla simultaneously and abruptly disappear. At this period hæmorrhages and other local accidents are most likely to occur, especially in early and severe attacks. It is at this time, too, that death comes in fatal cases. The disease is decidedly contagious. Finally, “a close, if not absolute, relationship exists between presence of the spirillum and manifestation of constitutional symptoms.”

Of 616 known cases 111 were fatal, giving a mortality of 18 per cent. Of 69 cases due to contagion 26 per cent. were fatal. The death-rate in British hospitals from relapsing fever is stated at 4·03 per cent., in Breslau 4·3 to 7·2. In St. Petersburg, in the

epidemic of 1865, it was as high as 14·97. In 99 fatal cases 48 deaths occurred during the invasion attack, 24 in the first interval, 6 in the first relapse, 11 in the second interval, 1 in the second relapse, the remainder after the cessation of the specific pyrexia. In most cases death was due to exhaustion consequent on the fever; it was so in 63 of the 99 casualties. 17 deaths were attributed to “pneumonitis,” 8 to acute dysentery. Females suffered more severely than males, and their death-rate also was higher. As regards the connexion between the disease and want Dr. Carter says:—

“Unquestionably the injurious consequences of fatigue and privation were not less marked in Bombay than is recorded of European cities; yet whilst the whole history of the epidemic under notice tends to show that spirillum fever prevailed most (if not first) and most severely amongst the famine immigrants flocking townwards, yet it was also apparent that not all such immigrants were either starving or exhausted (for many travelled by rail and had some means or could work); and, as matter of fact, only a certain proportion of the dying in hospital, whether new-comers or residents, were in a state of actual emaciation upon admission. It is possible that debility of the frame was often concerned with the marked tendency seen to death from exhaustion at acme of the febrile attacks; still exceptions to this view were not very rare, and at last I came to refer casualties to either unusual degrees or qualities of infection, or else varying personal predispositions—both of these influences, however, being presumptive only, and neither of them open to close investigation” (p. 246).

The pathognomonic character of spirillum fever is, of course, the presence of spirilla in the blood, and “many of the severe and most remarkable instances cited in this work were recognised solely by careful microscopical examination of the blood.” It is not asserted that the disease is to be invariably recognised by the blood test, but that “when this test is strictly applicable it settles for good a doubtful diagnosis.” The spirillum is “a colourless, slender, twisted filament actively moving in the liquid plasma until coagulation begins, when it seeks refuge amongst the red corpuscles and later in open spaces produced by contraction of the clot.” When present it is uniformly distributed throughout the circulation. It has not been found except in the blood, being absent from saliva, sweat, sputum, bile, intestinal mucus, urine, fæces—from the milk, the contents of the lymphatics, and thoracic duct—from the humours of the eye, and from the serum of blisters. The

length of a quiescent spirillum ranges from the fifteen-hundredth to the five-hundredth of an inch, its breadth uniform, from the fifty-thousandth to the forty-thousandth. Dr. Carter considers 250 millions a moderate estimate of the number of these parasites, which may be present in the blood of a patient. It is not to be supposed that the detection of the spirillum is an easy task. It requires a magnifying power of 500 diameters; it was originally discovered "only after long-repeated scrutinies," and some observers, "not unaccustomed to the microscope," could not see it at all! It is not, however, too minute for classification. It belongs to the Oscillatorial group of Algæ, and "is ranged with several pathogenic organisms amongst *bacteria* (Schizophyta), forming (like bacillus) a member of the Nematogenous subsection, in which the component cells are arranged in rows; and lastly, it comes into a small group characterised by colourless, screw-shaped threads, and embracing three genera—namely; *vibrio*, in which the filaments are short and slightly undulating; *spirillum*, in which they are short, spiral, and stiff; and *spirochæte*, in which they are long, spiral, and flexible." The parasite in question may belong to the last rather than to the second of these groups, but Dr. Carter prefers to retain the name spirillum originally given by Dr. Obermeier.

This voluminous work is most creditable to Dr. Carter's industry and zeal, but it is a relief to think that every disease, or every epidemic of a disease, is not likely to be treated of at such inordinate length. It is, perhaps, characteristic of modern medicine that of 450 pages devoted to "spirillum fever" therapeutics occupy but seven. Nor do the seven help us much. Our spirillum is hard to kill in the living body. Drugs capable of destroying it in the field of the microscope do not, "when administered variously and in doses consistent with safety, possess a manifest parasitocidal efficacy in relapsing fever." Antiperiodics and antipyretics are as ineffectual as antiparasitics, except that sodium salicylate seems, when exhibited at the rate of 100 grains a day, to have some power of reducing temperature. It is, no doubt, satisfactory to have established the dependence of another disease upon a parasitic organism, but we should like to know how to get rid of it when discovered.

Eastbourne as a Residence for Invalids and Winter Resort. By GEORGE MOSELEY, Fellow of the Royal College of Surgeons of England; Licentiate of the Society of Apothecaries; Member of the Sanitary Institute of Great Britain; late Fellow of the Medical Society of London; late Member of the Pathological Society of London; late Member of the Epidemiological Society of London; late Fellow of the Obstetrical Society of London; late Surgeon, Kilburn Dispensary; and Acting Surgeon, Royal Artillery Barracks, Shorncliffe; Author of "On Sandgate as a Residence for Invalids;" &c., &c., &c. London: J. & A. Churchill. 1882. Pp. 70.

WE have been careful to give Mr. Moseley's title page in full, without omitting even an "&c.," partly to impress our readers with the weight of his authority, partly to show our Dublin *confrères* what they have lost by amalgamating their Societies. If the profession in London had united all their medical associations into an "Academy of Medicine," how bare this title page would be! We could suggest as a motto, to fill part of the vacant space, the line which adorns the cornice of the celebrated private hall of audience in Shah Jehán's palace at Delhi—"If there be a paradise on earth it is this!" A perusal of Mr. Moseley's pages reminds us, on the one hand, of the style of that most successful of auctioneers, Mr. George Robins; on the other, of the story of the two American landowners competing for the patronage of an intending purchaser. "Healthy, is it?" said one, "if a man in our location wants to die he has to go into next township; he *can't* die in ours." "We had to kill a man the other day," said the rival, "to start our new cemetery!" "Empress of Watering Places," our enthusiastic author exclaims, "is surely a lofty title. It has been given to Eastbourne, and deservedly." One immense advantage over other watering-places Eastbourne unquestionably has had—it has not grown up, anyhow, from the infancy of a fishing village to the adolescence of a fashionable resort, with make-shift sewerage and water supply, hastily and unscientifically adapted to the successive stages of its growth; but it has been built, and drained, and sewered, and supplied with water from the beginning on hygienic principles and under the best scientific advice.

The mean annual temperature of Eastbourne, reduced from the observations of fifteen years, is 50.7° ; the mean winter temperature, 41.5° —that is, for January, February, and March; the range

between mean summer and winter temperature is $18\cdot5^{\circ}$. The average rainfall is $31\cdot6$ inches, falling on 168 days. The summer death-rate in 1881 was $13\cdot8$, and for eleven years (1871–1881) $15\cdot6$; the latter figure being based on the census of 1871, and, therefore, exaggerating the mortality—the population of Eastbourne having doubled in the decennium.

After making every allowance for our author's fervid imagination and glowing language, the facts remain that Eastbourne is a healthy place and a pleasant place, and one to which a patient may be sent with full confidence that he will have a "good time." Mr. Moseley stoutly maintains the superiority of English over foreign health resorts. We conclude with a suggestion that our practising physicians in this country might follow his example by "writing up" our Irish watering-places, and imitate his patriotism in asserting at least their equality to English or Continental sanatoria. Unless we are much mistaken many an Irish patient is sent abroad whose health might be as fully and as soon restored within our own four seas.

The Chamberlens and the Midwifery Forceps; Memorials of the Family and an Essay on the Invention of the Instrument. By J. H. AVELING, M.D., F.S.A. London: J. & A. Churchill. 1882. Pp. 231.

No text-book or systematic treatise on midwifery is complete without some mention of the Chamberlens, one of whom invented, or re-invented, the obstetric forceps, and it is possible that the enormous benefit to human life and human happiness which has resulted from its use is sufficient justification for Dr. Aveling's having devoted the leisure of ten years to the collection and arrangement of materials relating to the family. He has done well the work he undertook, and produced a volume of great interest, containing all that is ever likely to be known of a very remarkable family, as well as, incidentally, much curious information about the manners and customs of the times in which they lived. The book itself is handsome, and deserved to have had the proofs corrected with greater care. Misprints abound, especially where any foreign language is introduced. In our notice of the work we shall reverse the author's order and speak first of the discovery of the instruments invented by one Chamberlen and used by several members of the family, giving subsequently a few details of the men and the times in which they flourished.

Some time before 1638 Dr. Peter Chamberlen purchased Woodham Mortimer Hall, near Maldon, and the house continued in possession and occupation of the family until 1715. Over the porch of the house were two small rooms or closets, one above the other, and in the upper of these, about the year 1815, a lady discovered a trap-door in the floor. This being opened, a cavity was disclosed, about five and a half feet long and broad and one foot deep. It contained several boxes, in one of which were found the obstetrical instruments afterwards presented to the Royal Medical and Chirurgical Society by Carwardine in 1818, and still carefully preserved in the Society's rooms. Other things were found in the same hiding-place, as coins, gloves, "my husband's last tooth," wrapped in paper, and amongst them a testament with "1695" written in it. The last Dr. Peter Chamberlen died in 1683, so that the instruments, &c., must have been concealed subsequently to his death. It has been generally believed that this Peter Chamberlen, third of the name, was the inventor of the forceps, but Dr. Aveling infers, with great probability, that it was not so—"that he, like his descendants, received his knowledge of the midwifery forceps from his father" (another Peter). *Three* sets of instruments were found concealed, leaving out of consideration one forceps which was so rude in construction as to be useless, and there can be little doubt that our author is right in his conclusion that these were the obstetrical armamentaria of the three Drs. Peter Chamberlen, the one who died in 1683, his father, and his uncle. "The secret could scarcely have been kept if, at the death of the two latter obstetricians, their instruments had been allowed to fall into any other hands than those of Dr. Peter Chamberlen," the third of the name. The evidence that the last was not the inventor of the forceps is, we think, complete (pp. 224-6), and of the other two, who, strange to say, though of identical names, were brothers, the elder "may with almost absolute certainty have the honour conferred upon him of being the inventor of midwifery forceps." As to the "unmerciful censure" which has been pronounced upon the Chamberlens for having practised a secret art and kept it secret, Dr. Aveling's apology for their conduct, which we quote from his preface, is plausible enough:—

"It is not fair to judge members of our profession who lived two hundred years ago by the code of ethics which medical men now accept. At that time the possession of a nostrum was not looked on as degrading or derogatory to its owner, and the custom of not publishing secret

modes of practice was very common. Only a little more than a hundred years since, Smellie writes, ‘I have heard a gentleman of eminence in one of the branches of medicine affirm that he never knew one person of our profession who did not pretend to be in possession of some secret or another.’ When the forceps was invented the age delighted in mystery. No physician was considered accomplished in his art who knew nothing of astrology. The public readily believed in medical marvels, and resorted much to pretentious quacks, many of whom had special protection and privileges granted to them. All that can be fairly said against the Chamberlens is that they were no better than their neighbours, and that they failed to recognise the obligation imposed upon all members of our noble profession—of publishing freely and immediately any new method of alleviating human suffering which, by their industry or genius, they may have been able to discover.”

We shall now proceed to give some account of the family of the Chambreleins or Chambellans, or Chamberlans or Chamberlens, as elicited from various ancient records by Dr. Aveling’s industry and zeal. In 1569 “Villame Chambrelein” is registered in the records of the Church of St. Julian at Southampton as having been *reçu à la Cène* on the 3rd July. He, with his wife and three children, was a Huguenot refugee from Paris. He was probably a physician. His eldest child was Peter. In 1569 another son was born, and named Jacques, and in 1572 another, to whom, in spite of the existence of his eldest brother, the name Peter was also given. The third Peter Chamberlen was a son of this younger one. To these three Peters the three sets of instruments found in the hiding-place at Woodham Mortimer Hall probably, as we have seen, belonged, and to the eldest of the three Dr. Aveling awards the honour of having invented the forceps.

Peter the first was born in France, and came to Southampton with his parents in 1569. In 1596 he was settled in London. Two years later his name is found on the roll of the Barber Surgeons’ Company. He was frequently fined for absence from lectures, from which it is inferred that he “was already in good practice and could spend his time more profitably in attending to his professional duties.” Being a surgeon he could not legally practise physic (though physicians might practise surgery), and our Peter had frequent “difficulties” with the College of Physicians, who summoned him before them and fined him freely. One of these occasions, occurring in 1612, is thus described in the records of the College:—

“Being demanded if he gave not phisicke to one Mrs. Miller in my Lo. Mayor’s house he gave her a drink for 3 dayes to dry up a moisture which he supposed came from her backe. The drink he also made himselfe, aquæ ʒ ij., salsæ lb. ij., aq. liq. ʒ j., sassafras ʒ j., betonic m j., decocq. ad consumpt. medict. cap. bis in die ad ʒ iij., pro dosi. He conceived they wear the whits because he sawe yellowish staynings upon the clothe. It was unanimously agreed that he had given the medicine wrongly, and his practice was condemned. This occurred on the 13th November, and it is evident that a warrant was signed for his apprehension and removal to Newgate Prison, for on the 17th a meeting took place at the College to consider the imprisonment and release of ‘Peter Chamberlen, surgeon, senior’” (p. 6).

The extract from the records is a little incoherent, partly perhaps from misprints, but Peter went to prison. The Lord Mayor exerted himself for his release. The judges demanded, “on their authority and writ, that he should be discharged,” but the College held him fast, “as he had been committed for *mal praxis*.” Ultimately the Archbishop of Canterbury, under impulsion from the Queen (whom Chamberlen had attended in her confinements), obtained his release from the President and Censors. The Queen was Anne, wife of James I., and Chamberlen was also surgeon to Henrietta Maria, Charles I.’s queen, who, in 1628, miscarried of her first child, with Peter only in attendance. In 1631 he died, having lived in England for sixty-two years.

No entry relating to the birth of the second Peter Chamberlen is found in the Southampton Register; but from a deposition entered on the Annals of the Barber Surgeons it appears that he was born in Southampton “on a Sunday about 5 of the clock in the morning on the eighteth day of Ffebruary or thereabout in the year of our lord god according to the Computation of the Church of England one thousand five hundred three score and twelve.” He, like his elder brother, was fined for non-attendance at lectures of the Barber’s Company, to which he was probably admitted in 1596. In 1600 he seems to have obtained the Bishop of London’s licence to practise midwifery, and in this year his troubles with the College of Physicians began with a charge of “having treated morbus gallicus by means of purging and dry diet.” In 1620 he appears in the records of the College for the last time, having been accused of sundry acts of malpractice. He died in 1626, at the age of fifty-four.

Dr. Peter Chamberlen the third, son of the last Peter, was born

in London in 1601. He went to Cambridge at fourteen, and subsequently to Heidelberg and Padua, and took the degree of M.D. at the latter University in 1619. He took the same degree by incorporation at Oxford in 1620, and at Cambridge in 1621. His father had felt the want of such qualifications too keenly to expose his son to troubles like his own. In 1626 he was admitted to the College of Physicians. About 1647 he was physician extraordinary to Charles I., and so great was his reputation that the Czar wrote to the King to beg that Dr. Chamberlen might be allowed to enter his service, to which request the King declined to accede. He was then physician extraordinary to the King, and on this ground was released from prison (having been arrested "for some transactions connected with his apothecary") on petition to the House of Lords. He was a man of great activity of mind, and full of projects. In 1636 he took a leading part in an attempt to incorporate the London midwives, which was unsuccessful through the opposition of the College of Physicians. In 1649 he strove to induce Parliament to establish, or permit him to establish, public baths and bath-stoves in London, on which also the College splashed cold water, one of the jets being that "whereas publick Bathes have been, by their abuse, the cause in the Greek and Roman States (where there was greater necessity and less danger than in our cold clime) of so much physicall prejudice in effeminating bodyes and procuring infirmityes, and moral in debauching the manners of the people, that in either of them, upon the coming of the Christians into power, they were demolished or converted to other uses." During the Commonwealth he plunged into religious controversies with great ardour. In 1666 he invented a method of "propelling ships and carriages by wind," and tried to secure patents in various countries, but nothing came of it, "although it received the sanction and support of the King and Parliament." In 1672 he obtained a royal grant of the sole benefit for fourteen years of his "new art or way of writing or printing true English, whereby better to represent to the eye what the sound doth to the ear than what is now practised." His last great project was as unsuccessful as its predecessors—the Reconciliation of the Churches—and with this object in view he wrote many letters to Archbishops Sheldon and Sancroft from 1673 to his death in 1683. He died in Woodham Mortimer Hall, which he had purchased; and his tomb remains, rapidly falling into decay.

The elder Hugh Chamberlen was a son of the last Peter's, and

was born about 1630. He translated Mauriceau's *Livre des Accouchements* into English. The first edition of the translation appeared in 1672, and the work continued to be for many years the most popular text-book in midwifery. In Mauriceau's *Observations sur la Grossesse et l'Accouchement* he gives an amusing account of the circumstances of his meeting with Hugh Chamberlen in Paris. His *Observation XXVI.* is a description of one of Hugh's "failures." It is given in full by Dr. Aveling, but our limits prevent our extracting it. It is a case of "a little woman, aged 38, who had been in labour with her first child for eight days, the waters having escaped on the first day of her illness, with scarcely any dilatation of the os." Mauriceau could do nothing for her, owing to the extreme deformity of the pelvis, and refused to perform the Cæsarean section, "knowing well that it is almost always fatal to the mother." Then came upon the scene "an English physician named Chamberlen, who was then in Paris, and who, from father to son, practised midwifery in London, and who has since attained to the highest reputation in the art." Chamberlen undertook to deliver the poor woman in "less than half a quarter of an hour," but, after more than three hours of incessant effort, was obliged to give it up. Mauriceau, removing the fœtus after the mother's death, found "the uterus all torn and perforated in several places by the instruments which this doctor had blindly used without the guard of his hand." He had offered his secret to the French King's chief physician for 1,000 crowns, but his solitary experiment in Paris so disgusted him that he returned to England in a few days, "seeing plainly that there were more skilful accoucheurs than himself in Paris." Before leaving he obtained a copy of the work of Mauriceau, which he translated. In 1685 he published his "Manuale Medicum; or, a Small Treatise of the Art of Physick in General, and of Vomits and the Jesuits' Powder in Particular." In this he recommends bleeding, sweating, purging, and vomiting, especially the last, for everything. The book brought the College of Physicians down upon him. They objected to the system of treatment advocated, and asked by what authority he practised medicine in London. One Dr. Charlton reported that Dr. Chamberlen being called in to see Mrs. Willmer, "being taken ill of a paine in her right side under her short ribb, together with a great difficulty of breathing, having but fourteen weeks to go with child," "gave her in the space of nine days four purges, and caused her to be bled three times to the quantity of eight ounces

each time, then gave her something to raise a spitting, after which swellings and ulcers in her mouth followed." These are the words of the husband's deposition. Of course, the patient miscarried first, and then died. Chamberlen, the deposition concludes, refused a consultation, "speaking very much in his own praise, saying that no physician could do the cures which he had done, and very much vilified other physicians." Dr. Chamberlen's defence was considered unsatisfactory. He was fined ten pounds and "committed to the gaol of Newgate, there to remain till he should be thence discharged by due course of law." He paid the fine at once.

His letter to the Princess Sophia in reference to the birth of James II.'s son, afterwards the "Pretender," is given *in extenso* (p. 149). He was not present during the Queen's delivery, but he rejects, and gives good reason for rejecting, the story of the baby having been brought into the lying-in chamber in a warming-pan. His "Proposal to make England Rich and Happy" by the establishment of a Land Bank will be found on pp. 154-5. His proposal was first published in 1690, and in 1699 the scheme had utterly collapsed, and its author had retired to Holland under a cloud, and appeared no more in England. Yet in 1700 he was trying to induce the Scottish Parliament to adopt his Land Bank, and in 1702 he published a book advocating a union between England and Scotland—a work which was probably influential in bringing about the measure. He practised in Amsterdam for some years, where he sold his secret of the forceps to Roonhuysen.

There is little of interest in the life of his son, Hugh Chamberlen, junior. He died in 1728, and a magnificent cenotaph was erected in his honour in Westminster Abbey, where it may be seen in the north aisle of the nave. For some years before his death he had been domiciled with the Duchess of Buckingham, and the monument was erected by her son. He had been married three times, but left no son to inherit the family secret or the family skill.

Clinical Lectures on Diseases Peculiar to Women. By LOMBE ATTHILL, M.D. Seventh Edition, Revised and Enlarged. Dublin: Fannin & Co. 1883. 8vo. Pp. 393.

A WORK like that under notice, which has rapidly and successfully run the gauntlet of six editions, might seem on its seventh re-appearance to have but little to fear or to gain at the hands of a reviewer. Dr. Atthill has, however, himself pointed out, in a

préface to a former edition, that the responsibilities of an author rather increase in proportion as the wider diffusion of his work entails a corresponding increase of its influence upon the practice of others. Moreover, it is essential for the survival of such a work, aiming at the teaching of the best current practice, that it should constantly be adapted to its changing environments if it is to continue to hold its own in a struggle for existence with an ever-augmenting number of rivals.

Alive to the responsibilities of successful authorship, Dr. Atthill has kept each edition of his work abreast of the progress which is being made in gynæcology. We, therefore, welcome the appearance of this seventh edition which, as revised and enlarged by its author, presents no symptoms of crippled vitality. We are glad, also, that Dr. Atthill, while revising and adding what appeared to him needful, has yet done nothing to weaken the solid grounds of success upon which the work was originally planned. The edition before us still adheres to the former scope of the work as a handy clinical guide to the diseases peculiar to women; written, in the first place, for the use of students and general practitioners, and, therefore, properly excluding from consideration details which belong to medical science in general, as well as lengthened descriptions of operative procedures which fall only within the sphere of a specialist.

There are, however, some few points in regard to which these clinical lectures appear to us to be capable of still further improvement in subsequent editions; and this, too, without in any material way adding to their bulk or altering their general characters.

The first practical difficulty encountered by the student of gynæcology is that of recognising the special indications for a local examination of the generative organs. A short summary of *why* to examine might, therefore, we think, in Lecture I., usefully precede the directions as to *how* to examine. Among the methods of exploration we scarcely think that Dr. Atthill lays sufficient stress upon the bimanual method, which he recommends to be used "in all doubtful cases." As all cases are more or less doubtful to the tyro, this advice may prove sufficiently comprehensive for a student. We are, however, quite convinced that this method should never be omitted, especially by a learner whose examination should always be marked by thoroughness. Even in those cases where the examination reveals nothing new, it will have had the advantage of educating his fingers in a conjoint manipulation, which is neither

very easy nor reliable until a fair share of skill has been acquired. In describing healthy involution of the uterus after parturition, no mention is made of the development of new muscular tissue by which what is practically a new uterus is built up amid the disappearing fatty *débris* of the old. Degeneration and absorption alone are alluded to, and these changes are of themselves insufficient to account for perfect involution. This chapter on subinvolution is none the less a particularly useful one.

Another great factor in the creation of uterine disease, laceration of the cervix during labour, scarcely receives the attention which its importance now more than ever would seem to demand.

We should prefer that Lecture XIII. was headed "Malignant Diseases," rather than "Cancer of the Uterus;" as also that the somewhat indefinite term cancer was replaced by that of carcinoma. Sarcoma of the uterus, not alluded to in these Lectures, might then briefly be treated of under the more general clinical heading. The number of woodcuts might, we think, be very usefully enlarged, and a few of the old ones, such as Fig. 29, designed to show a Hodge's pessary *in situ*, discarded for others which would give a more natural representation of the pelvis and its viscera in mesial vertical sections. Illustrations which show the vagina as an open tube are unreal, out of date, and regarded even as diagrammatic representations, do not assist the understanding of any intelligent beginner. The widespread popularity of this work, translated as it now has been into French, sufficiently proves that it is the best of its kind extant, and specially so for students. We have only ventured to criticise a few of its details in a suggestive rather than a dogmatic temper; and we have done so all the more readily because, though it has now reached a seventh edition, Dr. Atthill's book is still young, *quoad* vitality, in professional favour.

Le Cartilage primordial, et son Ossification dans le crâne humain avant la naissance. By Prof. HANNOVER, M.D., Copenhagen. Copenhagen & Paris. 1881.

IN the early portion of the elaborate series of papers on the subject of the primordial cartilage published by Professor Hannover, he has dealt with the history of the doctrine which was first broached by M. Duges, in his memoir on the osteology and myology of the batrachians. His second contribution gives an exhaustive description of the primordial cartilage as it occurs in the human cranium,

which is illustrated by an account of its development and ossification in twenty-five specimens of the human foetus. The third and most important portion, of which the author has issued a separate French translation, includes a full examination and defence of the theory that the cranial bones are formed by two distinct modes of ossification—intra-cartilaginous and intra-membranous. This doctrine is supported by most elaborate and interesting microscopic researches on the subject of ossification. The formation of the individual cranial bones is next dealt with; the date of appearance of the separate centres is given with the minutest accuracy, and new facts are noted in connexion with the ossification of most of them.

In the last chapter of this *brochure* the doctrine of the cephalic vertebræ is fully discussed; and the author, relying on his original anatomical researches, has relegated to the class of cephalic vertebræ those cranial bones which undergo endochondral classification. The intra-membranous bones are excluded from this category.

The cranial segment of the cartilage which surrounds the chorda dorsalis is at first directly continuous with the vertebral, and, as well as the latter, is open posteriorly till development has progressed to a considerable degree. From this common (primordial) cartilage is formed the base of the occipital, of the sphenoid, ethmoid, inferior turbinated bones, and the tympanic ossicles; the other cranial bones are all produced by intra-membranous ossification, and the limit of each individual bone may be defined with comparative ease from the time of its first appearance.

The centres of ossification of the bones derived from the primordial cartilage appear long before their complete differentiation; and in this respect they present a marked contrast to the course of growth of the intra-membranous segments of the brain-case. The bones of the fully-formed cranial vault are not separated from the group derived from the primordial cartilage; for, in every case, the segments of the latter group are joined by others developed by intra-membranous ossification. This occurs in the union of the squamous portions of the occipital and temporal bones with the other parts, of the cornua of Bertin with the body of the sphenoid, of the pterygoid plates with the same bone, of the lamina papyracea with the ethmoid bone, &c.

Professor Hannover has examined with great care the progress of ossification in the primordial cartilage, and proves, we think conclusively, that the osseous corpuscles are wholly derived from

the nuclei found in the periosteum, and which penetrate into the interior of the cartilage in following the course of the Haversian canals. For observing the process he recommends the inferior portion of the squama occipitis, the relatively large dimensions of which give ample scope for examination of the various phases of ossification. The process is divisible into three stages. In the first, or preparatory stage, which precedes ossification, the cartilage cells become three or four times as large as before, while their contents clear up so as to present an almost limpid appearance. Immediately before the commencement of calcification the cell-capsule becomes thickened, and is found to divide into several layers, which come to be easily separated; and this thickening, accompanied by obscuration of the nuclei of the cartilage cells, increases as the time of calcification approaches. The second stage is that of calcification. The (crystalline) calcareous particles are deposited on, or within, the concentric capsular layers, which become completely covered with, and penetrated by, the calcareous crystals, while the cell-substance and nuclei remain quite free. The action of hydrochloric acid dissolves the lime, setting free the carbonic acid gas at the same time; and shows the cartilage cells, with their capsules and nuclei, still perfect. In the more advanced period of calcification, however, the cells, after a similar treatment, will be found to have become more or less indistinct, and the capsules to have lost the appearance of striation derived from the presence of a number of concentric layers.

The third stage is occupied by the solution and absorption of the whole calcareous mass. Osteoblasts are found to pass into its substance from the periosteum on either surface.

Neither the cartilage cells nor their nuclei have any part in the formation of the osseous corpuscles; and, accordingly, there is no such thing as true endochondral (intra-cartilaginous) ossification.

The ossification of the several bones which are derived from the primordial cartilage is next examined in detail, and the results obtained give the most unmistakable evidence of the painstaking research of the writer. The occipital bone he has found to be formed in every case by *five* centres of ossification; two of these being for the squamous portion of the bone (intra-parietal and supra-occipital segments), while the basi- and ex-occipital portions have one centre each. A vertical fissure is sometimes found in the supra-occipital division, which might give rise to the idea that this part of the bone grew originally from lateral ossifying

centres; but this is never the case. The results of our own comparatively limited experience have been, on this point, in accordance with that of Prof. Hannover. It is, however, in opposition to that of Professors Huxley and Kölliker, who enumerate lateral centres of ossification in both inter-parietal and supra-occipital portions, making four centres for that portion of the bone behind the foramen magnum. The inter-parietal segment is formed in membrane; the proper supra-occipital part is derived from the primordial cartilage. When Wormian bones are found above the superior curved line they are of intra-membranous origin; when below, they must have taken origin from the cartilage. From the lower margin of the ossifying supra-occipital segment a tongue-like process sometimes projects between the two occipito-mastoid cartilaginous areas—the *manubrium squamæ occipitis* of Virchow (*os epactal*, *os Kerckringii*). Towards the foramen magnum they are separated by the *membrana spinoso-occipitalis*, which was regarded by Hagen as a remnant of the membranous wall of the cranium, but is shown by Professor Hannover to have been formed partly by the membranes of the brain and spinal cord.

The condyloid and basilar centres of ossification appear simultaneously. The posterior condyloid foramen is as variable in appearance in foetal life as it is known to be in the adult skull. The anterior foramen is distinctly represented in the foetus of two months, and the incisura jugularis is well formed half a month later. The basilar centre is of elongated form, and is partially divided on the postero-superior surface into anterior and posterior segments. This division he has found to be only apparent; but in several anencephalic skulls the writer has found two distinct basilar centres existing, which was described as the normal condition by Rambaud and Renault. Two centres were also found by P. Albrecht in the basilar segment of several foetal skulls, which he called *basi-occipital* and *basi-otic* respectively. In a foetus of about two months old a longitudinal fissure was found on the superior surface of the basilar portion of the cartilage, indicating the former situation of the notochord.

The formation of the sphenoid bone, of which so many conflicting accounts have been given by various embryologists, has been investigated with the most laborious care, which has in turn yielded results which will be received, we are inclined to think, with some degree of alarm by a large proportion of the rising generation of medical students. No less than twenty-six centres

of ossification have been discovered by the industry of Professor Hannover, which make a huge addition, indeed, to the lists supplied to us by even the latest editions of Gray or Quain. They are disposed in the following order:—

- “ 1 and 2—in the bottom of the sella turcica, towards inferior surface
(at three months);
- 3 „ 4—on either side of the crest (rostrum), appearing at the same
time as the former;
- 5 „ 6—in the alar apophysis (same date);
- 7 „ 8—on the side of the planum (at four months);
- 9 „ 10—at the superior part of the rostrum;
- 11 „ 12—at the extremity of the limbus sphenoides, behind the
last-mentioned (five and a half months);
- 13 „ 14—in the posterior root of the lesser wing (three and a half
months);
- 15 „ 16—in the anterior root of the lesser wing (five months);
- 17 „ 18—in the great wing (two and a half months);
- 19 „ 20—in the external pterygoid plate (two and a half months);
this cannot be said with certainty to be separate from
the last;
- 21 „ 22—in the internal pterygoid plate (two and a half months);
- 23 „ 24—in the hamular process (four months);
- 25 „ 26—in the cornua of Bertin (three months).”

Among the leaders of embryological research there are quoted on this subject:—J. F. Meckel, who gave fourteen centres of ossification; Cruveilhier, who reduced the number to twelve; Kölliker, who gave a similar number, but arranged the centres somewhat differently; C. Brach, who recognises but ten; Virchow, twelve; Rambaud and Renault, nineteen, adding six other (accessory) centres; Huxley, twelve; Sappey, fourteen.

The sella turcica is deep, even from the date of formation of the primordial cartilage. In only one case, however, was there a perforation discoverable of the bottom of the fossa, which should correspond to the seat of invagination of the epiblastic process, from which, as Rathke was the first to show, the anterior lobe of the pituitary body is developed. The observations of Professor Hannover have left no doubt on his mind that the internal pterygoid plate is developed from the primordial cartilage, although this view has been combated by some very high authorities. The only portions of the sphenoid bone which are developed in membrane are the cornua sphenoidalia (bones of Bertin).

As the ethmoid is the slowest to ossify of all the cranial bones, only a limited number of the centres are formed before birth. These are:—one each for the middle and inferior turbinated bones; another for the superior; one for the pars papyracea (seven and a half to eight months). The inferior turbinated bone he considers as essentially belonging to the ethmoid, being developed in the same continuous mass of cartilage. The centre for the cribriform plate (with the crista galli) appears subsequent to the time of birth. The lamina papyracea and a part of the walls of the labyrinth are formed in membrane; the remainder of the bone is developed by intra-cartilaginous ossification. A certain portion of the perpendicular plate remains cartilaginous throughout life.

Of the temporal bone the petro-mastoidean portion, which forms but a single piece, is derived from the primordial cartilage, while the tympanic ring, external auditory canal, tegmen tympani, and the squamous portion, with its zygomatic processes, are all formed in membrane.

At the early age of two months, and even somewhat less, the tympanic ring is represented by a tendinous thread. Ossification commences about the middle of the third month. The foramen mastoideum, which marks pretty closely the junction of the occipital and mastoid segments, is quite distinct at the age of two and a half months, and of relatively large size, as it is throughout the whole period of intra-uterine life.

The osseous centres for the petro-mastoid part of the cranial wall appear in the walls of the inferior (posterior) and external semi-circular canals, and about the age of five months—the former being a little in advance of the other. At this early date the position of the former centre will be found immediately in front of the mastoid foramen.

Ossification of the petrous portion of the bone begins at the superior border of the internal auditory meatus, and rapidly spreads. The styloid process is visible in a two months' foetus, and is at this date a direct continuation of the cartilage of the upper branch of the incus.

A peculiar rotation of the whole os petrosum takes place during the growth of the foetus. It is well known that in early foetal life the tympanic membrane occupies a position nearly horizontal, which becomes gradually exchanged afterwards for one approaching the vertical; but it remained for Professor Hannover to show

definitely that this change of direction is not confined to the membrana tympani alone, but equally engages all parts of the petrous bone. Between the ages of two and three months of intra-uterine life, the membrane is nearly horizontal in position—sometimes absolutely so. The ossicula auditûs have also a horizontal position. The incus is behind the malleus, and a little inside and above the latter.

The base of the stapes in the fenestra ovalis is turned upwards and backwards. Both fenestræ look directly downwards. Similarly with regard to the intracranial aspect of the bone. The border, which in the adult is internal or posterior, is superior during foetal life. The rotation which the petrous bone gradually undergoes, is on its long axis, and embraces an angle of about 45° . It is not quite uniform, being somewhat more pronounced in front than behind. Simultaneously with this rotation the styloid process becomes directed downwards and forwards. In early foetal life, after passing from the base of the cranium, it was bent at a right angle to itself, and crossed the tympanic membrane at its lower third.

With regard to the ossification, the tympanic ring and squama, which are formed in membrane, present ossifying centres before the other parts which are formed in the primordial cartilage (at two and a half and three months respectively). Besides the centre at the internal auditory meatus, already referred to, the other openings—fenestra ovalis, fenestra rotunda, and hiatus Fallopii, also seem to be starting points for the ossifying process.

The position of the future growth of the ossicles is first indicated by a common cartilaginous excrescence springing from the inner wall of the tympanum. At two months there is no trace of division. At the age of three months the form of the stapes is pretty distinct, and it may be separated from the fenestra ovalis with some tearing of its margins. In the foetus of this age the cartilaginous ossicles have about half the bulk of those of adult life. The incus is the first to present its permanent form. At two months the malleus is represented only by the cartilaginous hemispherical elevation above referred to, in which it is joined with the incus. In this mass the cartilage of Meckel ends posteriorly, and the head of the malleus which is here formed is the last ossified trace of the cartilage. The malleus does not exist in the foetus below the age of two months, and its head, which corresponds to the head of Meckel's cartilage, is at

first continuous with the incus. At this date the processus gracilis begins to be represented by a tendinous cord running below the cartilage of Meckel, and lodged on the same sheath; *it is not formed in the primordial cartilage*. A little after the age of two months this process presents an ossification of about a millimetre in length, while an ossifying centre does not make its appearance in the body of the malleus till the age of four months, when that of the processus gracilis has reached a length of three millimetres. After this date the head gradually separates from the cartilage of Meckel, and the latter structure begins to diminish relatively in size, and with considerable rapidity. In the foetus of five months the insertion of the tensor tympani into the malleus is distinctly visible, and there is a well-marked interval between it and the base of the processus gracilis. The striations of the muscular fibres are also perfectly obvious. The whole of the malleus with its processes are ossified at the age of eight months, excepting the point of the manubrium, which lies between the layers of the tympanic membrane.

The growth of Meckel's cartilage has been studied with extreme care by Professor Hannover, and it is in this situation that some of his most important results have been obtained. Its earliest appearance in connexion with the head of the malleus in the foetus of two months is already familiar to us. Passing downwards and forwards, the prolongation of this structure is applied to the inner surface of the lower jaw below the inferior dental foramen and the attachment of the mylo-hyoideus muscle, and ends in a hook-like process (hamulus processus Meckelii) by the side of the symphysis. In the foetus of four months it measures 4–5 mm. in length, and in front is separated from its fellow of the opposite side by a fibrous septum. The tip ascends obliquely towards the first incisor tooth. The sheath, at the age of three months, is found to be calcified, but does not contain osseous corpuscles. In a foetus of five months there is, besides the sheath common to it and the processus gracilis mallei, a more delicate investing layer of connective tissue proper to each. It contains large cartilage cells, embedded in a hyaline matrix. Its length is not diminished to the age of about seven months, but after this date the shortening is obvious. At eight months its sheath cannot be traced beyond the posterior half of the lower jaw, and in this sheath but a small vestige of the cartilage remains at the posterior part (just below the inferior dental foramen). The author especially insists on the

complete absence of any connexion between the cartilage of the symphysis and that of the hamulus, which has been described by many embryologists. He differs entirely from Kölliker's idea of the cartilage of Meckel having two investing bones—the lower jaw and the processus gracilis mallei. In his introductory remarks he shows that in the so-called endochondral ossification the cartilage really only acts the part of a mould on which the bone is formed, but does not think the hypothesis admissible that the cartilage of Meckel fulfils even this function in relation to the lower jaw, as these structures entirely differ in form; and are also separated both by the periosteum of the inferior maxilla and by the strong investing sheath of Meckel's cartilage. He also points out that it is only the connective tissue sheath of this structure which ossifies in front and blends with the substance of the maxilla—it is not a calcification and ossification of the cartilage itself.

The Goethe-Oken hypothesis of the cephalic vertebræ is carefully examined by Professor Hannover, and finally adopted, with, however, most important modifications. Careful repeated examinations of the upper part of the notochord have shown this structure passing (excentrically) in the anterior parts of the bodies of the upper cervical vertebræ, in the body and odontoid process of the axis, and through the middle odontoid ligament (lig. suspensorium dentis) into the primordial cartilage of the basis cranii. Passing upwards and forwards in the clivus (usually along the dorsal surface) it terminates, after forming an S-shaped or C-shaped curve, opposite the future situation of the spheno-occipital synchondrosis, the extremity forming a swelling of variable shape. The situation of the future spinal vertebræ is indicated in early foetal life by corresponding swellings on the notochord; and, taking these as his guide in the case of the cephalic vertebræ, he is led to admit the existence of two thickenings as constant—one corresponding to the mid-basilar region, the other to the spheno-occipital synchondrosis. Corresponding to these chordal swellings the formation of two cephalic vertebræ may be supposed, separated by the spheno-occipital synchondrosis. The lower of these may, he believes, be regarded as a double vertebra, analogous to that formed by the union of the odontoid process to the body of the axis. He bases this view on the (occasional) presence of two centres in this segment of the bone, as recorded by Rambaud and Renault; and on other observations of his own, especially in cases

of anencephalic skulls with spina bifida, in which the posterior surface of the basilar process, was distinctly segmented into an anterior (triangular) and a posterior (rectangular) division.

The intrinsic evidence afforded by a careful examination of the results obtained by Professor Hannover, as conveyed in these pages, affords the highest testimony to the value of his conclusions; and we could hardly point to an instance in which the most exhaustive information has been combined with an enthusiastic spirit of original inquiry, in more fortunate proportions, than in the conduction of this research. The contribution will be prized by students of anatomy as one of the most valuable which has been made during recent years in this interesting department of embryological science.

Atlas of Portraits of Diseases of the Skin. Fasciculus XVI.
London: New Sydenham Society Series. 1882.

AFTER the lapse of some time the issue of illustrations of diseases of the skin has been resumed by the New Sydenham Society. In the present fasciculus we are presented with a portrait of purpura hæmorrhagica in a young girl, and an instructive series of drawings exemplifying most of the varieties and peculiar forms of molluscum contagiosum, some forms of which are apt to occasion doubt in diagnosis unless a careful examination be made.

Nerve-vibration and Excitation as Agents in the Treatment of Functional Disorder and Organic Disease. By J. MORTIMER GRANVILLE, M.D. London: J. & A. Churchill. 1883. 8vo. Pp. 128.

IN this work the author recommends a new method for the treatment of nervous diseases. This consists in rhythmical tapping of the surface of the body corresponding to the nerve centres or to the course of nerve trunks, or ganglia.

For the carrying out of this procedure he has devised instruments by which the force and rapidity of the tapping can be varied at will, and by which the blows may be struck by a small hammer, a disc, a wire-brush, &c. In some cases the tapping is not made directly on the skin, but the part to be operated upon is immersed in water, and the percussor, furnished with a disc, is made to move in the fluid at some distance from the surface.

By these methods good results have been obtained in neuralgic affections, disorderly movements have been controlled, morbid irritability has been allayed, the vasomotor state has been improved, and numerous other disorders, even tabes dorsalis and epilepsy, have been more or less relieved.

We have no doubt that the treatment by nerve-vibration, if carried out impressively, and if backed up by liberal doses of the sort of physiology and pathology which is to be found in the work before us, will greatly benefit that class of patients who experience relief from metallo-therapy, the application of magnets and solenoids, mesmerism, or pilgrimages to Lourdes. But, however admirable the practice may be, the principle on which it is based is certainly erroneous.

If we rightly understand the author, he supposes that the nerve-cells and fibres are naturally in a state of vibration, not a molecular vibration, such as is supposed to exist in all forms of matter, but a gross vibration of the cell or fibre as a whole, similar to that into which a pianoforte string is thrown when struck by the hammer. The disorders which are benefited by tapping are due to some disturbance in this normal vibration; it is excessive, deficient, not rhythmic, or not in harmony with the vibrations of other parts. The object of the tapping is to alter the existing mode of vibration, and restore to the part its normal swing. Thus, sharp pain is due to too rapid vibrations of the nerve, and is to be relieved by slow tapping; dull pain is caused by too slow vibrations, and calls for rapid percussion.

The impossibility of such a vibration of parts as supposed by the author scarcely needs to be pointed out, as the nerve-cells and fibres are not stretched or poised in such a way as to be capable of vibrating as wholes, and their contact with surrounding parts would make any such vibration impossible.

The author continually appeals to the analogy of musical harmony and discord, but never defines what he means by the discords which he supposes to exist in the nerve-vibrations in diseased states. Mere interference of vibrations is not discord. It is only when a certain number of interferences occur in a second that two notes form a discord; and as regards the vibrations themselves there is no more reason why two notes which, when sounded together, give thirty-three beats per second should be more discordant than when they give three hundred. It is simply due to the structure of our ear that the former combination is discordant,

the latter not. What causes discord or concord in nerve-vibrations is not explained, or the difficulty even considered.

Even on the subject of musical vibrations the author does not seem very clear, since he says "we stretch a violin or harp-string to change the amplitude (!) of its vibrations, and thus alter its tone."

Although we differ completely from the author in his physiological and pathological theories, we do not wish to discourage anyone from employing his practical method of treatment. It will be a welcome variety in the treatment of patients who are never happy except when they are being treated for some mysterious complaint, and, as Dr. Granville says, it has the advantage over nerve-stretching that, if it does no good, it can do no harm.

The New Sydenham Society's Lexicon of Medicine and the Allied Sciences. By HENRY POWER, M.B., and LEONARD W. SEDGWICK, M.D. Sixth Part. *Cet-Con.* London: The New Sydenham Society. 1882.

THE sixth part of Messrs. Power and Sedgwick's useful compilation appears to have been prepared with care. The definitions are concise and to the point, and we have not noticed any misprints or errors. Some of the entries, however, may well be deemed superfluous—for instance, those of Chames, Chamicocos, &c., tribes of Indians in South and Central America, who have no obvious connexion with medicine or any of the allied sciences.

The printer deserves credit for the excellence of the typography.

History of Rome and of the Roman People, from its Origin to the Establishment of the Christian Empire. By VICTOR DURUY, Member of the Institute, ex-Minister of Public Instruction, &c. (Translated by W. J. CLARKE, Esq., M.A.) Edited by the Rev. J. P. MAHAFFY, Professor of Ancient History, Trinity College, Dublin. Part I. London: Kelly & Co. 1883. Large 8vo. Pp. 64.

WE have received the first part of this magnificent work, the original edition of which, in French, has so firmly established the reputation of its author for sound scholarship and historical research that editions are now being published, not only in England, but also

in America, Spain, and Portugal. For Irish readers this English version of Duruy's "History of Rome" possesses additional interest from the fact that it is edited by a distinguished and erudite Irishman, the Rev. J. P. Mahaffy, Fellow of Trinity College, Dublin, and Professor of Ancient History in the University of Dublin.

Although only the first of the seventy-two parts which will compose the work is before us, we have no hesitation in speaking of it in the highest terms of praise. Of the Introduction, the subject-matter—the Pre-Roman Epoch—is very attractive. In the present monthly part the topics treated of are—(1.) The Geography of Italy; and (2.) The Ancient Population of Italy. Mr. Clarke's translation runs smoothly, and is couched in excellent English. Nor have the accessories of the publisher's art been omitted—the clear type, beautiful paper, and copious illustrations—all enhance the value of the letterpress. Some idea of the profuseness with which the "History" is illustrated may be gained from the fact that it is to contain about 3,000 engravings, 100 maps and plans, by W. and A. K. Johnston, Erhardt, and others, besides numerous chromo-lithographs by Goupil, Percy, &c.

The price of each monthly part is four shillings, or weekly parts may be obtained at a cost of one shilling each, of Messrs. Kelly and Co., 51 Great Queen-street, London, W.C.

The Irish Medical Directory for the year 1883. Dublin: Offices of *The Medical Press and Circular.* London: Baillière, Tindall, & Cox. 1883. 8vo. Pp. 648.

WE have received this Directory for 1883, containing its customary and multifarious variety of facts bearing upon the various phases of medical life, and also, we regret to say, the customary, or perhaps more than the customary, number of errors.

On opening the volume and glancing down the list of names of Medical Practitioners in Ireland we are struck by the enormous number who are marked as not having replied to the circular asking for particulars concerning them. We have taken the trouble of counting those so marked, and find that out of the whole list no less than 1,178 are stated to have sent no reply. This state of things seriously detracts from the value of the work as a Directory. We have made inquiries, and find that several of those gentlemen whose names are marked as not having replied, in reality did so, and in good time; some of those to whom we have

spoken did so as far back as October last. Again, one has only to compare the statements contained in the paid advertisements relating to Charitable Institutions at the end of the volume with those contained in the body of the Directory to perceive how very carelessly and inaccurately the latter have been drawn up.

It is clear that if the compilers of "The Irish Medical Directory" wish to secure and retain the confidence of the Profession in Ireland they must expend a good deal more care upon it than they seem to have done this year.

Diet for the Sick. By J. JAMES RIDGE, M.D., Lond., &c. Second Edition. London: J. & A. Churchill. 1882. Pp. 54.

THERE are but few physicians now-a-days who will not admit that the diet of a patient is as important as his medicine. Nevertheless there is a great lack of knowledge and of resource amongst practitioners generally in the suggestion of suitable varieties and kinds of food for invalids who cannot be induced to take ordinary articles of diet, as well as of the mode in which such should be prepared. This little book is well adapted to supply such a want; and, in its present revised and enlarged form, will be found a most useful guide to which the physician may refer his patients for information, as well as one from which he may obtain many valuable hints for himself.

Clinical Lectures on Senile and Chronic Diseases. By J. M. CHARCOT. Translated by W. S. TUKE, M.R.C.S. With Plates and Woodcuts. London: The New Sydenham Society. 1881.

PROFESSOR CHARCOT'S reputation is now so widely spread, and his acumen as an accomplished clinical observer so justly established, that all his writings are sure to obtain a large and appreciative circle of readers.

From a prefatory note by the author we learn that the present volume, together with the Lectures on Diseases of the Nervous System already published, represent but fragments of a projected and very extended work on that large and varied class of affections which are only incidentally, as it were, met with in ordinary hospitals, while they occur in profusion in asylums, poorhouses, and great institutions such as *la Salpêtrière*.

M. Charcot gracefully acknowledges the honour the New Syden-

ham Society has paid him by re-issuing his lectures to its members, and he likewise recognises the fidelity and elegance with which Mr. Tuke has accomplished the task of translation.

It is sufficient to point out that these lectures evince once again what excellent use Professor Charcot has made of his exceptionally wide field of observation; they contain many interesting and novel observations and speculations, and merit attentive perusal.

The principal subjects discussed are gout, acute and chronic articular rheumatism, nodular rheumatism, cerebral hæmorrhage and miliary aneurisms, together with some general remarks upon senile pathology and the thermic conditions of old people.

RECENT WORKS FOR NURSES FOR THE SICK.

1. *Lectures on Medical Nursing, delivered in the Royal Infirmary, Glasgow.* By J. WALLACE ANDERSON, M.D., Lecturer on Medicine, Royal Infirmary School, and Physician to the Royal Infirmary Dispensary, Glasgow. Glasgow: Maclehose & Sons. 1883. Pp. 224.
2. *A Manual of Nursing, Medical and Surgical.* By CHARLES J. CULLINGWORTH, M.D., Physician to St. Mary's Hospital, Manchester. London: J. & A. Churchill. 1883. Pp. 172.

THE fact that several books^a have been published within the last few years for the use of women who are being trained as nurses, indicates that there is an increasing supply for the growing demand for such useful members of the community as well-trained nurses have proved themselves to be. To meet the demand, an impetus has also been given in different centres to the provision of proper instruction for those women who desire to obtain employment as trained nurses for the sick in hospitals as well as in private. Such books as those now under notice will be found useful to anyone who may have opportunities for doing similar work—a work, it must be said, which has been more encouraged and its value more recognised by the laity than by the majority of medical men. We accordingly entirely approve of the recent action of the Committee of Distribution of the Dublin Hospital Sunday Fund, in giving an extra grant to those hospitals in this city which have lately improved their

^a Amongst others, *Lectures on Nursing*, by W. R. Smith: J. and A. Churchill, 1875; and *Hints for Hospital Nurses*, by Rachael Williams and Alice Fisher: Maclachan & Stewart, 1877. Also, *Veitch's Handbook for Nurses for the Sick*, and *Domville's Manual for Hospital Nurses*, &c.: J. and A. Churchill.

system of nursing—well knowing that such compare favourably with other institutions in which an unenlightened system of nursing and general management still prevails that is as irrational as it is detrimental to the charities themselves.

The first book on our list deals solely with medical nursing, and consists of a course of ten systematic lectures, exactly as delivered to the nurse probationers of the Glasgow Royal Infirmary. The lectures include all that a trained nurse should know with regard to her duties to the patient and to the medical attendant; and what, perhaps, is just as important, they do not teach too much. A few questions on the subjects discussed in the several lectures are appended to each.

Dr. Cullingworth's manual contrasts with Dr. Anderson's in being more strictly a *text-book* for nurses, surgical as well as medical. Like Dr. Anderson's, it contains several useful recipes for invalid cookery and for the preparation of peptonised foods, and it has an advantage over the Scotch work in being illustrated. We quite agree with Dr. Cullingworth that "rules are more likely to be faithfully carried out when the principles on which they are founded are intelligently understood." It is reasonable to suppose that a nurse will take more care in washing a catheter after its use, if she has been taught that mischief is frequently caused by the employment of an imperfectly cleansed instrument, than one who views such a procedure as merely a perfunctory part of her duty.

For a similar reason the explanation as to the modes of contagion in the different infectious diseases, and the principle on which the nursing of each kind of fever should be carried out, is sensibly and clearly given by the respective authors. Dr. Cullingworth also devotes a chapter to the antiseptic method of treatment, and explains the principle upon which it is founded and the substances employed. Both books are well indexed, and can be highly recommended.

Supplementary Catalogue of the Pathological Museum of St. George's Hospital. By ISAMBARD OWEN, M.D., Curator. London: J. and A. Churchill. 1882. Pp. 284.

WE have no hesitation in saying this Catalogue cannot fail to be most useful to those who have opportunities of visiting the Museum of St. George's Hospital. Next in importance to a good museum is a good catalogue, in which a concise account of the descriptive particulars of any preparation can be readily found. The arrange-

ment adopted in this catalogue is adapted for ready reference, and the information about the majority of the preparations is exact and interesting, without being prolix or diffuse.

A Treatise on the Diseases of Infancy and Childhood. By J. LEWIS SMITH, M.D., Clinical Professor of Diseases of Children in Bellevue Hospital Medical College. London: H. K. Lewis. 1881. Pp. 836.

THIS is one of the best books on the subject with which we have met, and one that has given us satisfaction on every occasion on which we have consulted it, either as to diagnosis or treatment. It is now in its fifth edition, and in its present form is a very adequate representation of the subject it treats of as at present understood. The important subject of infant hygiene is fully dealt with in the early portion of the book; the great bulk of the work is appropriately devoted to the diseases of infancy or childhood. Its merits are enhanced by a good index, a short preface, and the absence of any dedicatory epistle. As the place of books in the public estimation is fixed, not by what is written *about* them, but by what is written *in* them, we would recommend any one in need of information on the subject to procure the work and form their own opinion on it, which we venture to predicate will be a favourable one.

A CASE OF OVARIOTOMY, IN WHICH THE EXPANDED BLADDER WAS
WOUNDED.

DR. WALTER F. ATLEE reports, in the *American Journal of the Medical Sciences* for Jan., 1883, a case in which ovariectomy was performed in a woman, aged fifty-six years, in whom the bladder was accidentally opened. In order to close the tear in the bladder, a large gum catheter was passed through the urethra and then into the orifice; and after an assistant had taken a firm hold of the bladder between the thumb and forefinger on each side, it was withdrawn. The edges of the tear in the bladder were then pushed in and invaginated. A thick plaited silk thread was chosen, having a needle at each end; one needle was passed directly from before backwards through the walls of the bladder on one side, about one quarter inch from the tear, and the other in a like manner on the other side, and then the thread was tied very firmly and cut off close to the knot. After cleaning carefully the abdominal cavity of urine, blood, and cystic contents, the wound in its walls was sewed up, and the usual dressings applied. Recovery took place.

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By WILLIAM THOMSON, M.A., F.R.C.S.I.; Surgeon to the Richmond Hospital; Member of the Surgical Court of Examiners, Royal College of Surgeons, Ireland; General Secretary, Academy of Medicine in Ireland.

LIGATURE OF THE ARTERIA INNOMINATA.

THIS operation was performed by the reporter on the 9th of June of last year in the case of a man suffering from aneurism of the right subclavian artery. The case, with a *résumé* of all available reports of similar operations, has been published in the *British Medical Journal*, and since then in separate form. The operation, which was very tedious, is thus described:—

“The patient, being deeply anæsthetised, was placed in the usual position on his back, with the head thrown well towards the left side. I made a free incision along his clavicle, from the anterior border of the sterno-mastoid outwards, and joined its inner extremity by an incision along the anterior border of the same muscle. The clavicular attachment of the muscle was divided and turned up, and then the sterno-hyoid and sterno-thyroid were cut to discover the carotid, carefully avoiding the branches of the omo-hyoid plexus, which could be seen. This vessel was of very large size—so much so, indeed, that some of those present thought I had arrived at the innominate. This belief was encouraged by the fact that, at first, pressure upon it with the finger stopped pulsation in the carotid higher up, and also in the tumour; but this did not always occur, and was evidently the result of a pressure communicated from a distance to the subclavian. I now went further down in search of the bifurcation; but this was an extremely tedious and anxious proceeding, and I was compelled to divide nearly the whole of the sternal attachment of the sterno-mastoid. Coming at last upon the origins of the subclavian and the carotid, at what was an alarming depth, the difficulty of reaching the innominate beyond was increased by the occurrence of a heavy thundercloud, which served to shut out all the top light. A

mirror was then used to throw light into the wound, but without much good result, and I was here much delayed. The sheath of the innominate was at last slowly scraped through; and, using an ordinary aneurism needle for this purpose, I succeeded in passing it under the vessel, which appeared to be healthy. I then determined to thread it with ordinary silk, and to use this to draw back the tape ligature, which Mr. Barwell had been good enough to send me. But failing in this, as the opening between the sheath and the vessel was too small, I withdrew everything; and, threading a special needle (invented by Mr. Barwell), with the curved portion movable by a lever, I introduced this with comparative ease. I then, before tying, tested the effect of pressure upon the vessel between my finger and the tape, lifting the vessel freely from its bed; and, finding that all movement ceased in the aneurism and in the carotid, I secured the ligature with three knots, drawing the ends with moderate firmness. The edges of the wound were brought together, and a drainage-tube having been introduced into the lower part, an antiseptic dressing was applied and fixed by means of an elastic roller. The arm and shoulder were also swathed in sheets of wadding, which had been previously heated. He was at once carried to bed; and I saw him again in about half an hour. The left side of the face was cold, but the pupils were equal. He was only recovering from the effects of the ether; but I noticed that, when he attempted to ask me some questions, he always broke down in the middle of the sentence, and then seemed to be trying to recollect what he wished to say. This was the only symptom of brain-disturbance that ever presented itself; and, in the evening, he seemed to have his mental faculties perfectly unimpaired.

“The temperature was normal until the ninth day, when some pus escaped from the wound. On the thirtieth day there was slight hæmorrhage from the unclosed sinus; on the thirty-ninth very severe hæmorrhage; and the patient died on the forty-second day, being the second longest survival on record.

“At the *post mortem* the aneurism was found to be in process of cure.

“An ulcer, somewhat larger than a sixpence in area, was situated at the bifurcation of the innominate into the subclavian and carotid arteries. It involved the anterior portion of the three vessels, and, looking into it, the clots blocking the three vessels could be seen. The surface was gray and shreddy. There was no staining of blood visible. The vessels were partly slit, and a syringe was used to force water through in the direction of the ulcer, but although this was carefully tried with each vessel, not a drop passed through. The incisions were then extended along the vessels towards the ulcer.

“The wall of the innominate was thickened almost from its origin, and this thickening increased gradually as the site of the ligature was approached until the depth was about two lines. The clot was firmly

adherent to the walls, and extended backwards through the greater length of the vessel. At its cardiac side was a small tongue of organised clot rather loosely attached, and between it and the firmly adherent clot were some retiform bands of fibrous tissue deeply stained with blood.

“The subclavian was found to be empty, except at its cardiac end, which was well blocked with a firmly adherent clot. This projected towards the aneurism for about half an inch. No water could be forced through.

“The common carotid felt solid, but on opening it, it was found that the centre of the clot had degenerated, and was occupied by pulpy purulent material. The walls of the vessel were thickened. The clot terminated near the bifurcation into the external and internal carotids.

“The aorta was thickened, atheromatous, and, in patches, calcareous. The lung and pleura, as seen on the right side, were healthy.

“An incision was made into the aneurism from summit to base. It contained about half an ounce of dark thick blood, and in the centre was some passive clot occupying a cavity about the size of a walnut. The process of cure was evidenced by fibrinous layers upon the walls to the extent of a third of an inch, and on the inner sides of this coating were large masses of coagulum less firm, but evidently undergoing consolidation.

“A prolonged and careful search was made for traces of the ligature, but none could be found. On the posterior surface of the innominate, opposite the ulceration, was some fatty tissue intimately adherent to the wall, which could with difficulty be cleaned.

“A more minute examination of the parts was subsequently made. The vessels were all divided into the ulcer. This showed that the innominate had been constricted at about a quarter of an inch from the cardiac margin of the ulcer. The walls were not divided, and the ulcer had not taken origin at the seat of the ligature. The vessel was not occluded by adhesion of the inner surfaces, but a chink remained at the ligatured portion through which the clot continued, and had been united to the clots in the subclavian and carotid. The clot in the subclavian was well established. The ulcer had eaten into the clot in the innominate at its centre, and had in this way caused the hæmorrhage.

“In order to search for the ligature, an inch of the posterior wall of the innominate was cut out, and several sections were made by Mr. P. S. Abraham, Curator of the Royal College of Surgeons Museum, but no trace of it could be found. The coats of the vessel were undivided.”

It is unnecessary here to go into the question of the propriety of ligaturing the innominate under any circumstances, but the case is placed on record as one of the very few which have thus far been the subject of this operation.

Table showing Cases in which the Innominate alone was Ligatured for Subclavian Aneurism.

OPERATOR	Patient's Age	Date of Operation	Date of Hæmorrhage, if any	Time of Death
1. Mott, New York - -	57	1818	23rd and subsequent days	26th day.
2. Gräfe, Berlin - -	30	1822	A few weeks after, and 60th and 67th days	67th day.
3. Norman, Bath - -	—	1824	—	3rd day.
4. Arendt, St. Petersburg	36	1827	None	8th day.
5. Hall, Baltimore - -	52	1830	At operation	6th day.
6. Bland, Sydney - -	31	1832	17th and 18th days	18th day.
7. French surgeon - -	—	1834	—	3rd day.
8. Lizar, Edinburgh - -	30	1837	19th, 20th, and 21st days	21st day.
9. Gore, Bath - - -	52	1856	17th day	17th day.
10. Pirogoff, St. Petersburg -	Middle age	—	None	48 hours.
11. A. W. Cooper, S. Francisco	—	1859	None	9th day.
12. A. W. Cooper, do.	—	1860	21st and 34th days	34th day.
13. Bickersteth, Liverpool -	—	1868	6th and 7th days	7th day,
14. W. Thomson, Dublin -	49	1882	30th and 39th days	42nd day.

Cases in which the Innominate alone was Tied for Secondary Hæmorrhage.

1. Hutin, Paris - - -	27	1842	None from innominate	12 hours afterwards
2. Lynch, America - -	23	1867	12th day	12th day.
3. S. B. Partridge, Calcutta	—	May 2, 1870	None	1½ hours.

Cases in which the Innominate and the Carotid were tied for Aneurism.

OPERATOR	Age of Patient	Date of Operation	Date of Hæmorrhage	Result
1. A. W. Smyth, New Orleans	32	1864	14th, 33rd, and 51st days	Lig. of vertebral ; recovery.
2. A. B. Mott - - -	—	1868	Sacburst into pleura on 23rd day	Death on 23rd day.
3. E. S. O'Grady, Dublin -	—	1873	None	Death in 20 hours.

Case in which the Ligature was passed round the Artery, but not tied ; Recovery.—Peixoto.

Case in which Temporary Occlusion of the Arteria Innominata was effected by a Clamp ; Unsuccessful.—George Henry Porter, Dublin.

Case in which a Tourniquet was applied to the Arteria Innominata ; Death.—Professor Bujalsky, St. Petersburg.

Cases in which the Innominate was exposed, but not tied.—Professor Wm. H. Porter, Dublin ; Hoffman,^a New York ; Aston Key, London.

The innominate *alone* thus appears to have been ligatured for various causes in all seventeen times previously to this case. The results have been—deaths, 17 ; recoveries, 0. The innominate and the carotid have been tied simultaneously three times ; deaths, 2 ; recovery, 1 (after ligature of the vertebral).

The periods at which death occurred stand in this order :—Gräfe's, 67th day ; Thomson's, 42nd day ; Cooper's, 34th ; Mott's, 26th ; A. B. Mott's, 23rd ; Lizar's, 21st ; Bland's, 18th ; Gore's, 17th ; Lynch's, 12th ; Cooper's, 9th ; Arendt's, 8th ; Bickersteth's, 7th ; Hall's, 5th ; Norman's, 3rd ; Pirogoff's, 2nd ; O'Grady's, 20 hours ; Hutin's, 12 hours ; Partridge's, 1½ hours. The ligature separated in Mott's case on the 14th day ; in Gräfe's on the 14th ; Smyth's on the 17th ; Lizar's on the 19th.

Hæmorrhages occurred as follows :—Bickersteth's, 8th and 9th days, when there were three ; Gräfe's, on 14th ; Smyth, 14th, 15th, 16th, 33rd, and 51st ; Gore's, 17th ; Bland's, 17th and 18th ; Lizar's, 22nd, 23rd, and 24th ; Mott's, 23rd, after that "frequent ;" Thomson's 30th and 39th days.

ON THE TREATMENT OF FRESH WOUNDS.

Mr. John Duncan (*Edin. Med. Journal*, July, 1882) discusses the question of the treatment of fresh wounds. In reference to procuring rapid union in the deeper parts he recommends, instead of wire, catgut, which will last about eight days, and the ordinary lead buttons. This time will be sufficient to secure union in most cases. As to the drainage-tube he finds that if a wound remain aseptic the use of this is rarely required. He has come to this conclusion after trying all sorts of absorbable tubing—catgut, decalcified bone, and other forms. The catgut is unnecessary if the wound be aseptic, is inefficient if it suppurate. The others last too long if the wound goes on well ; melt and soften in a few days in purulent discharge. Undoubtedly if accumulation were to take place it would delay healing by keeping the surfaces apart, although he does not find that in aseptic cases it tends to cause

^a A fourth case is sometimes described as "Post's," but this was the same as that described by Hoffman.

inflammation or raise the temperature. Still it is to be avoided, and there are wounds in which it is nearly certain to occur if special precautions be not taken. In these indiarubber or glass is the best material, but it ought to be removed as soon as possible, and a special dressing for the purpose is advisable on the night of operation or the following day. Many clinical attempts with this and that method have gradually led him to adopt a style of dressing which enables him in a large proportion of cases simply to lay the patient aside till his wound is healed. The method is as follows:—The wound is carefully and accurately stitched. If it be large an interval of an inch or less is left between two of the stitches at some convenient part, and if, from the nature of the wound, firm compression throughout is uncertain, a few of the catgut ligatures are left long and brought out at the interval, or an indiarubber drainage-tube is inserted. In most cases the wound is completely closed. A piece of dextrinised oiled silk is applied. Mr. Lister's object in this application is to protect from carbolic irritation; but, were it not that it also prevents adhesion of the dressings, Mr. Duncan would not consider it of importance when the edges are carefully approximated. One layer of moistened gauze is the next covering, and over it a thick padding of dry salicylic wool firmly compressed by a gauze bandage. The layer of gauze facilitates the ultimate removal of the dressings. Without it the wool, irregularly hardened by the dried blood, forms a sort of cuirass and is apt to stick. He has tried silk instead of the wool as a dressing. It does not, however, produce the same equal pressure throughout. Mr. Duncan gives notes of several cases in which he has used this method, and in which it was found to be unnecessary to change the dressing after the first day until the wound was completely healed.

TRACHEOTOMY IN CROUP.

Dr. Lewis S. Pilcher, of Brooklyn (*Annals of Anatomy and Surgery*), is of opinion that tracheotomy ought to be performed early in croup, and with a view to the removal of the membrane. The canula should, if possible, get below the exudation, and the point of incision should be as low as possible—*i.e.*, below the thyroid isthmus. The two disadvantages met with here—*viz.*, the varying number of vessels and the embarrassing mobility of the mediastinal connective tissue, which is increased by the great respiratory efforts made, Dr. Pilcher gets rid of by Pean's forceps and an automatic suprasternal retractor. These instruments he

finds render him to a very great extent independent of assistants. When the opening into the trachea is made it should be kept open by means of hooks or retractors, and a careful inspection of the interior made. When there is an exudate in process of exfoliation every effort should be made to secure its removal at once. A soft feather, or a sponge on the end of a curved forceps, or a forceps alone, may be used for this purpose. The insertion of the canula then becomes a much easier and safer matter. Where, after the introduction of the canula, catarrhal products tend to collect in the trachea, should the patient be unable to cough them out, inhalations of vapour, instillations and injections of liquids, may be practised. The two latter are the methods chiefly relied on by the author. When the symptoms are not urgent, he permits three or four drops of warm water and chloride of sodium, or of lime-water, or of dilute lactic acid, to run down through the tube into the trachea as often as seems to be necessary to keep the secretions diffuent and the expectoration free. Whenever this is not sufficient to prevent the continued marked accumulation of secretions, whether of tenacious and inspissated mucus or of muco-pus and membranous *débris*, injections of the solvent fluid, to the amount of a drachm or more, are to be made by means of a syringe deep into the cavity of the trachea.—*Edin. Med. Journal*, Dec., 1882.

AMPUTATION AT THE HIP-JOINT BY TRENDELENBURG'S METHOD.

Dr. T. R. Varick (*American Journal of the Medical Sciences*) records a case in which this method was successfully employed. He had a rod made, which is thus described:—"A steel rod 38 centimetres long, 6 millimetres broad, biconvex on section, and 2 millimetres thick at the centre, with blunt edges, but provided with a movable lance-shaped point 5 centimetres long." The operation as performed by Trendelenburg is to pass the rod obliquely through the soft parts in front of the joint in the same way as the two-edged knife in the well-known method of Lisfranc, only 2 centimetres higher. The rod enters, therefore, about 4 centimetres below the anterior and the superior spinous process of the ilium, passes between the femur and the femoral artery and emerges at the fold of the scrotum. The point is now removed and an elastic tube or band firmly wound in figure of eight fashion round the ends of the rod and passing in front of the thigh. In this way the great vessels of the thigh and all the soft parts in

front of the joint are compressed. Lisfranc's knife is then introduced 1 to 2 centimetres below the rod, and by cutting from within outwards in the usual way the anterior flap is formed. Having ligated the vessels and removed the compressing band and rod, Trendelenburg next disarticulates the joint and then forms the posterior flap in a similar manner. Dr. Varick modified the operation by applying the same method to the posterior flap when he had secured all the vessels in the anterior flap. The posterior flap was formed by cutting from without inwards, the incision commencing about half an inch below the point of egress and carried through the integuments and muscular tissue to the bone and terminating as near as possible at the point of entrance of the rod. The capsular ligament was opened posteriorly, and the limb being carried across the abdomen the joint was readily disarticulated. Two or three small arterial branches were ligated, after which the compression was removed. Except from the unloading of the enlarged veins on the distal side of the site of operation there were not two ounces of blood lost.

Dr. Varick thinks that if, instead of bringing the point of the rod out at the fold of the scrotum, it was directed more posteriorly, or nearer the tuber ischii, the risk of missing any of the larger arterial branches would be avoided.

A METHOD OF REMOVING BENIGN TUMOURS OF THE BREAST WITHOUT MUTILATION.

Professor Gaillard Thomas (*New York Med. Journal and Obstetrical Review*, April, 1881, and *Amer. Jour. Med. Scien.*, July, 1882) recommends a new method of dealing with benign tumours of the female breast:—

“The method of operation described Dr. Thomas has practised thus far in a dozen cases. He distinctly states that it is entirely inappropriate for tumours of a malignant character, and that it is applicable neither to very large nor to very small benign growths, being insufficient for the former and unnecessarily radical in its character for the latter. The growths for the removal of which he has resorted to it have been fibromata, lipomata, cysts, and adenomata, and have varied in size from that of a hen's egg to that of a duck's egg or a little larger. The operation is thus performed:—The patient standing erect and the mamma being completely exposed, a semicircular line is drawn with pen and ink exactly in the fold which is created by the fall of the organ upon the thorax. This line encircles the lower half of the breast at its junction

with the trunk. As soon as it has dried the patient is anæsthetised, and with the bistoury the skin and areolar tissue are cut through, the knife exactly following the ink line until the thoracic muscles are reached. From these the mamma is now dissected away until the line of dissection represents the cord of an arc extending from extremity to extremity of the semicircular incision. The lower half of the mamma which is now dissected off is, after ligation of all bleeding vessels, turned upward by an assistant and laid upon the chest-walls just below the clavicle. An incision is then made upon the tumour from underneath by the bistoury, a pair of short vulsellum forceps is firmly fixed into it, and, while traction is made with it, its connexions are snipped with scissors, the body of the tumour being closely adhered to in this process, and the growth is removed. All hæmorrhage is then checked, and the breast is put back into its original position. Its outer or cutaneous surface is entirely uninjured, and the only alteration consists in a cavity at the former situation of the tumour. A glass tube with small holes at its upper extremity and along its sides, about three inches in length and of about the size of a No. 10 urethral sound, is then passed into this cavity between the lips of the incision, and its lower extremity is fixed to the thoracic walls by indiarubber adhesive plaster, and the line of incision is closed with interrupted suture. In doing this, to avoid cicatrices as much as possible very small round sewing-needles are employed; these are inserted as near as possible to the edges of the incision, and carry the finest Chinese silk. After enough of them have been employed to bring the lips of the wound into accurate contact, the line of incision is covered with guttapercha and collodion, and the ordinary antiseptic dressing is applied. If the glass drainage-tube acts perfectly, there is no offensive odour to the discharge, and the temperature does not rise above 100° : the tube is in no way interfered with until the ninth day, when the stitches are removed. If, on the other hand, the tube does not appear to perform its function satisfactorily, it is manipulated so as to cause it to drain all parts of the cavity, and warm carbolised water is freely injected through it every eight hours. On the ninth day, when the stitches are removed, the tube is removed likewise."

ETHER INHALATIONS IN ANGINA FAUCIUM.

Professor Concato, of Bologna (*Practitioner*, Sept., 1882), has, for the last year or so, been accustomed to administer ether-spray as an inhalation in sore-throat. His method is simple. The patient takes the exit-tube of a Richardson's spray-producer in his mouth; sulphuric ether is sprayed against the pharynx for three minutes, and the treatment is repeated every three hours. Six cases so treated were cured without other means. The cases are all described

as "anginas," of what variety is not quite clear. Each case, however, began with a rigor and a sharp attack of fever, with a temperature of 40° C. (104° F.). Swelling of the sub-maxillary glands in nearly all the cases, and pain and difficulty of swallowing in all of them, were noted. The tonsils were always swollen and protruding. One of the patients, a girl of eleven, had scarlatina succeeding to the angina. Another patient, whose attack of sore-throat lasted eleven days, and was very severe, had enlarged spleen. Four or five days was the average duration of the attack; one patient, however, attended by Prof. Cantato at home, got well in twelve hours. It is set down as an advantage of the ether treatment that it very speedily puts an end to the local pain and diminishes the swelling, and so quickly restores the power of easy swallowing. In some cases the fever quickly subsided at the same time. The treatment is worthy of further trial.—(*Rivista clin. di Bologna*, No. 3, 1882.)

RESECTION OF PORTIONS OF INTESTINES.

At the Royal Medical and Chirurgical Society, London (*Lancet*, Dec. 16, 1882), Mr. Treves read a paper upon this subject, in the course of which he said:—Portions of gut have been excised for various diseased conditions from all parts of the tube, from the pylorus to the rectum. Among the illustrative cases given of the various operations is Kœberlé's, who excised two metres of the small intestine for multiple stricture with perfect success. In properly selected cases, resection would appear to be indicated in some forms of intussusception when all other means have failed, and when, on opening the abdomen, the invagination is found to be irreducible; in gangrene of gut after strangulated herniæ, in gangrene after some forms of internal strangulation, in non-malignant strictures of the small and large intestine, and in malignant strictures that are yet local. Other things being equal, the mortality after resection would appear to depend more upon faults in the details of the operation than upon any other single cause. There are two procedures—in one an artificial anus is established after resection; in the other, the two ends of the divided gut are united by sutures, and the mass returned into the abdomen. The former method has been the more successful. There are many objections, however, to an artificial anus, especially of the small intestine, and there appears to be no reason why the latter method should not prove the less fatal if the technical defects of the procedure be remedied. The operation of uniting the bowel after resection presents these

difficulties. It is not easy to maintain the two ends of the gut in accurate apposition while the sutures are being introduced. The sutures are apt to be irregular. The gut above the obstruction is usually much dilated, while that below is shrunken, and it has been found almost impossible to unite well those unequal parts. One of the most common causes of death, therefore, after the operation is due to escape of intestinal contents at the suture line. There is no reason, however, why the escape should not be as surely prevented as it is in cases of pyloric resection. "To meet some of the difficulties of the operation I have ventured to introduce the following appliance:—The gut above the part to be resected is secured by a special clamp lined with indiarubber, to avoid undue compression of the bowel. The gut below is secured in like manner, and the obstructed or gangrenous part is excised. The corresponding ends of the two clamps are then united by transverse bars, so that they form with the clamps a rigid square frame. By means of this frame the two divided ends can be very accurately approximated, and can be firmly retained in position while the sutures are being applied. As it is difficult to apply sutures to collapsed gut a sausage-shaped indiarubber bag about three inches long is used, that can be distended to four or five times its natural size through a small tube inserted in the centre of its long axis. This bag is sufficiently distended to make it firm, and one end is introduced into the upper segment of the divided gut, while the other is introduced into the lower segment. The tube through which the bag is dilated thus occupies the suture line. After being introduced the bag is dilated to a good size. By this means a firm plug is introduced into the gut, so as to form a substantial basis over which to apply the sutures. Moreover, by increasing the degree of distension of the bag, all inequalities in calibre between the two segments of the bowel can be overcome. Before the last sutures are applied the bag is emptied of air and is withdrawn, it being capable in its shrunken state of being drawn through a hole of the dimensions of a No. 12 catheter. If the sutures are properly applied—*i.e.*, if the mucous membrane be not included in the stitch—there should be no danger of wounding the bag. At least fifteen or twenty sutures should be used. By means of this appliance it is possible to excise portions of the colon through an incision in the middle line." In cases of stricture of the colon it is often impossible to diagnose the exact seat of the obstruction, and under such circumstances the abdomen has been several times opened in the middle line, and, the obstruction having been found, a second

operation has been performed in one or other loin. Resection of the gut from the loin presents many difficulties, and can scarcely be performed without establishing an artificial anus. If colectomy were always performed through the middle line it would, in cases of doubtful diagnosis at least, render one operation only necessary. The greatest fatality has been found in those cases of resection of the colon where the abdomen was first opened in the middle line, and the gut subsequently removed from the loin through another incision. The author lately resected some two inches of gut from the middle of the descending colon for epitheliomatous stricture through an incision in the middle line. The divided ends of the bowel were united by means of the appliance described, and the gut returned into the abdomen. The man had had symptoms of obstruction for some months, and was *in extremis* when the operation was performed. He died in twelve hours. At the *post-mortem* the gut at the suture line was found fully distended with fluid fæcal matter, yet not the least trace of that matter had escaped from the intestine. The case serves to demonstrate that portions of the colon can be resected through the middle line, and that the gut may be so united as to prevent all escape of contents.

Mr. Sydney Jones excised the pylorus in the case of a man, aged fifty-seven, who was the subject of malignant disease of that part (*Lancet*, Nov. 25, 1882). On the 15th of October the stomach was washed out with water, and from that date until the 17th he was allowed only skimmed milk, taking about two pints daily. The stomach was again washed out about an hour before the operation, which commenced at 2 15 p.m. of the 17th, and was carried out under the spray (1 of carbolic acid to 80 of warm water), and afterwards dressed with antiseptic precautions in the usual manner. Ether having been administered, Mr. Sydney Jones made an oblique incision extending from left to right, commencing an inch to the left of the middle line and four inches below the ensiform cartilage, four and a half inches in length, inclined downwards, carefully dividing the various layers until the peritoneum was reached, when, having arrested all hæmorrhage, the peritoneum was divided on a director to the extent of the previous incision. In the upper part of the wound, which gaped widely, the border of the liver was seen rising and falling under the costal arch with respiration, which was then jerky and irregular, whilst the growth was exposed about the centre of the wound. The gall-bladder was not seen. Slightly to the right of the middle line was a vertical band passing upwards to

the liver and covered with a reflexion of the peritoneum; this, which was the round ligament, was divided between a pair of clamp forceps, and both ends of a small vessel ligatured. Other peritoneal adhesions existed in this neighbourhood. The tumour, which was larger than a duck's egg, was connected by numerous adhesions to the surrounding parts, and below it, close to the head of the pancreas, were a good many infiltrated glands about the size of small nuts. The great omentum was divided in pieces between double ligatures. The tumour being now more free, the stomach was lifted up towards its pyloric end and flannels wrung out of warm water were placed under it to prevent bleeding into peritoneal cavity. The lesser omentum connected with the pyloric end of the stomach was gradually cleared from the tumour by cutting between pairs of artery clamps and ligaturing both ends of the section. There was a good deal of hæmorrhage close by the head of the pancreas, for the most part venous. When the pyloric region was thus made more free, an opening was carefully made over the finger introduced from below in the lesser omentum to the left of the growth. The pyloric artery was then ligatured and divided. Then a Rydygier's clamp was put round the stomach by introducing one limb through the opening in the lesser omentum, and passing the other across the anterior surface; it was then closed, and the stomach divided to the right of it. The clamp was then removed, and hæmorrhage from the cut surface arrested; this was not considerable, only a few minute points requiring ligature; the stomach was found to be empty, and the mucous membrane appeared to be quite healthy. The cardiac end of the stomach was carefully sponged out. A little brownish fluid was seen at the pyloric orifice; a small sponge was placed in each orifice. The clamp was next placed on the duodenum just beyond the tumour, and the growth with some infiltrated and adherent glands removed. The duodenum was firmly held up when divided to prevent retraction. The growth was seen to extend a little further down the duodenum on its posterior border, so a small piece, including this, was removed by scissors. There was very little hæmorrhage on removal of the clamp, and a few fine ligatures proved sufficient. The upper part of the duodenum was mopped out, and a clean piece of sponge introduced. As the section of the stomach was larger than that of the duodenum, the upper part of the former was stitched together, for about two inches, by means of nine sutures of fine carbolised silk, through its mucous membrane, and a corresponding number of the same material, including muscular

and peritoneal coats. The cut ends of the stomach and duodenum were now brought into apposition, and corresponded well in size. The posterior part of each was then sewn together with fine carbolised silk, the mucous membrane being carefully adjusted last, the first sutures applied being passed between the mucous and muscular coats, perforating the latter and the peritoneum, and then passing through the peritoneal and muscular coats of the apposed edge; as the opening became smaller it was not found possible to pursue the same plan towards the front, and here Lambert's stitches only were used. There were about fifty-two silk sutures put into the stomach and duodenum. The parts around were carefully cleansed, the flannels having been removed, and the stomach placed in position again. The external wound was closed by means of seven or eight deep silk, and four superficial catgut, sutures. During the course of the operation, which lasted almost three hours and a half, the patient became much collapsed, and it was found necessary to bandage his limbs and administer a brandy enema. After he was put to bed, in addition to the above means, hot blankets and hot-water bottles were applied, and another brandy enema given. He became conscious about 8 30 p.m., complained of pain and asked for morphia, but gradually sank, dying at 11 15 p.m.

A *post mortem* examination was made on the following day by Dr. Sharkey. The body was much emaciated. Rigor mortis well marked in both extremities. Pleuræ adherent by old adhesions, at left apex and right base. Lungs a little collapsed, otherwise normal. Pericardium and heart natural. Liver small and pale, at the upper border of its right lobe was a nodule of new growth about as large as a walnut. Kidneys normal. On opening the abdominal cavity, by enlarging the incision of operation, the peritoneum looked almost normal. All that was remarkable were some dotted hæmorrhages about the pyloric end of the stomach, and an exceedingly small quantity of red fluid on the surface of the coils in the neighbourhood. One could scarcely see without close examination that any operation had been done, as the stomach, colon, &c., occupied their normal positions, and the stomach had its normal shape.

The carcinomatous growth removed measured one inch and a quarter along its upper border, and three inches and a half along the lower; its base was of a firm fibrous character, completely surrounding the pylorus and adjacent portions of the stomach and duodenum, and the inner aspect presented a fungating ulcerative surface, the

lumen of digestive tract at this point only just permitting the passage of a small finger.

GASTROSTOMY.

Another case of gastrostomy is reported by Mr. Francis Mason (*Lancet*, Oct. 14, 1882, p. 634), who, on the 4th October last, performed the first step of this operation at St. Thomas's Hospital on a man aged about sixty for rapidly increasing carcinoma of the left tonsil and neighbouring parts. An incision about two inches and a half in length was made parallel with the costal cartilages of the left side and about a finger's breadth from their margin, the lower end of which was about opposite the ninth rib. The structures of the abdominal wall were divided until the peritoneum was reached, which was carefully opened. The forefinger and thumb of the left hand were then introduced, and, guided by the left lobe of the liver, the stomach was readily grasped and brought out slightly at the wound. Great care was taken, both before and after the peritoneal cavity was opened, to arrest all hæmorrhage with catgut ligatures. The parietal layer of the peritoneum was accurately adjusted in contact with the visceral layer of the stomach, and the two surfaces were kept in contact by passing a carbolised silk thread through the whole thickness of the abdominal parietes, and also through the serous and muscular walls of the stomach; four such stitches were employed. Two other deep sutures were made to transfix each end of the wound only, care being taken to include the peritoneum. Lastly, a stitch was passed through the serous and muscular walls of the stomach itself, and was left hanging from the wound to be used as a guide for the future opening of the stomach. Superficial stitches were used to unite the edges of the skin wound. The operation was performed throughout under the carbolic spray, and dressed with the usual antiseptic precautions. The patient was very comfortable during the remainder of the day and passed a good night, but on the following day he complained of hiccough, which distressed him a good deal, giving rise to a painful dragging in the region of the wound. This was allayed by the administration of small doses of medicine containing dilute hydrocyanic acid; beyond this nothing but ice in small quantities, and afterwards, at the patient's special request, a small quantity of tea was allowed by the mouth, he being fed by nutrient enemata. On the second day there was some difficulty of breathing, and he spoke of a sensation of not being able to cough up phlegm and

other accumulations from the air-passages. Still his temperature kept fairly normal. On the third day, however, the temperature rose to 101° , and in the afternoon his dyspnœa became so urgent that it was thought necessary to perform tracheotomy as a *dernier ressort*. This operation was performed by Mr. Duncan, the house-surgeon, with some relief, but, in two or three hours after, the patient died, apparently from exhaustion, exactly seventy-two hours after the gastrostomy was performed. At the *post mortem* examination it was found that adhesion of moderate firmness had taken place between the visceral and parietal layers of the peritoneum at the site of the operation, but not sufficiently firm to heal. The mucous surface of the stomach had not been perforated, and there was no general peritonitis. It may be added that the patient inhaled ether during the operation, which may possibly account partly for the dyspnœa, and also that he had some symptoms of carbolic poisoning, as indicated by the condition of the urine during life.

TWO CASES OF VARICOCELE CURED BY INTRAVENOUS INJECTION OF
CHLORAL.

THE first (left side) had existed for over two years, and was as large as a pigeon's egg, the diameter increasing on effort to $4\frac{1}{2}$ centimetres. It caused severe pain and partial atrophy of the testicle. Four injections, each of half a gramme, of chloral hydrate were made with a Pravaz syringe at four several points into the covering of the varicocele, the result of which line of treatment was that a slight grumous exudation from the punctures ensued, and on the following day some signs of orchitis. These were overcome by cold carbolised applications; and as the upper part of the tumour seemed unaffected, three more injections were practised there. In six days the patient was well, and the varicocele gone. It has not reappeared since. The other case (also left) had existed five years, and was larger and harder than the foregoing, owing probably to repeated attacks of phlebitis in the varicose veins. A slight degree of inflammation along the spermatic cord existing, the patient was first treated with lead lotion. Five injections of chloral hydrate ($\frac{1}{2}$ gramme) were administered as before, resulting in great diminution of the tumour. In a week three more injections were given, and the result, with some slight intercurrent inflammation, was a complete and permanent cure. The various methods of treating varicocele are so numerous, and so little satisfactory in many cases, a new and hopeful one is by no means unwelcome.—*Australasian Med. Gaz.*, Nov. 15, 1882.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. BANKS, M.D.
General Secretary—W. THOMSON, M.D.

SURGICAL SECTION.

President—JOHN KELLOCK BARTON, M.D., President R.C.S.I.
Sectional Secretary—WILLIAM STOKES, F.R.C.S.I.

Friday, January 11, 1883.

The PRESIDENT in the Chair.

Exhibition of Specimens.

Specimens by card were exhibited by MESSRS. WHEELER (Vice-President), THOMSON, and STOKES; and living specimens by MESSRS. BENSON, SWAN, WHEELER (Vice-President), and CROLY.

Communications.—1. *Anæsthetics in certain Surgical Operations*;
2. *Trephining in Mastoid and Tympanic Disease.*

1. DR. FITZGIBBON read a paper advocating the use of anæsthetics in surgical operations upon the mouth, anus and rectum, and especially in operations for the removal of internal hæmorrhoids. The anæsthetic he recommended was bichloride of methylene, which he had largely used in the foregoing operations, employing Junker's inhaler.

The PRESIDENT corroborated Dr. Fitzgibbon's statement with regard to the facility of exploring the rectum under anæsthetics.

MR. HAMILTON pointed out that rectal surgery had for many years past undergone great modification. He alluded to a paper of his published several years ago recognising the advantage of anæsthetics in the treatment of hæmorrhoids. Anæsthetics were, he considered, more adapted to the rational and scientific treatment of rectal diseases than

any other department of surgery. Indeed, he did not think that any conscientious surgeon would operate without anæsthetics, which had the advantage, in addition, of overcoming the repugnance that many persons had to such physical examination.

MR. THOMSON observed that from the time he was a student in the Richmond Hospital almost all rectal operations had been performed under the influence of anæsthetics, except in cases where there was some special contra-indication. His experience of ether as an anæsthetic was so favourable that he did not see any reason to substitute bichloride of methylene for it, especially as it was not as safe as ether.

MR. ORMSBY distinctly preferred ether, and pointed out that statistics were against the use of bichloride of methylene and chloroform. He doubted the propriety of advocating the use of anæsthetics in all cases requiring rectal operations.

MR. PRATT stated that his experience of bichloride of methylene was very favourable. Its action was much more rapid than that of ether, and the required quantity used much less, especially in protracted operations.

MR. MYLES asked Dr. Fitzgibbon to state the grounds upon which he claimed for bichloride of methylene advantages over ether in operations on the tongue.

The VICE-PRESIDENT (Mr. Wheeler) endorsed all that Dr. Fitzgibbon had said in reference to the advantages derived from the use of bichloride of methylene. He thought that the length of time patients remained intoxicated after the use of ether was a disadvantage which was got rid of by the use of bichloride of methylene, and that there was less liability to sickness after the latter. In cleft palate operations, especially in very young children, the use of anæsthetics was indicated.

DR. MACSWINEY alluded to the late Professor Morgan's researches on anæsthetics, and asked Mr. Stokes what anæsthetic he had used in the case of excision of the superior maxilla exhibited previous to the meeting.

MR. STOKES observed that in the case Dr. MacSwiney alluded to ether was used, and he preferred it to any known anæsthetics.

DR. KILGARRIFF also gave a preference to ether, and enumerated various important operations about the mouth in which he had employed it with success.

DR. FITZGIBBON replied, emphasising the alleged advantages of bichloride of methylene over ether and chloroform, particularly in operations about the rectum and the mouth.

2. The VICE-PRESIDENT (Mr. Wheeler) read a paper on trephining in mastoid and tympanic disease. He related the causes of purulent discharges from the ear, and the necessity for early trephining in diseases of

the osseous structure, if not yielding to their treatment within a reasonable time. He recorded the last two cases he operated on—the first, that of an old man seventy years of age (who was present), and the second that of a patient aged forty-one, who suffered from acute inflammation of the mastoid process. Both made good recoveries. Statistics, which he quoted, showed that nearly all the cases left to nature or expectant treatment died. Having enumerated the various channels through which purulent discharge found its way to the cranium, he advocated trephining in that situation where the mastoid cells and tympanum would be opened, and the dura mater exposed—namely, anterior to a line which divides the mastoid process vertically, which would avoid the lateral sinus and the lower border of the temporal lobe on a level with the external auditory meatus.

MR. BENSON inquired what treatment previous to operation had been adopted by Mr. Wheeler, mentioning that Mr. Pollock and other authorities did not despair of effecting cures in such cases even when there was caries of the mastoid cells. He also asked Mr. Wheeler to state on what grounds he had arrived at the conclusion he did, which was now proved to be accurate.

MR. DOYLE mentioned cases of mastoid disease that had been successfully treated by making an incision on the mastoid process.

DR. HENRY KENNEDY stated that, in his experience, such cases as had been detailed were not permanently benefited by incising the mastoid process.

MR. THOMSON asked whether Mr. Wheeler had adopted any other treatment than what he had stated in his paper, and also whether in all cases of otorrhœa with tenderness over the mastoid process he would at once recommend trephining.

DR. BENNETT pointed out that Mr. Wheeler had described his treatment only in cases in which, while there was otorrhœa, there was manifestly disease in the neighbourhood of the mastoid process capable of being detected. There were a number of cases where the bone was diseased, and where the disease was entirely remote from the mastoid process.

MR. WHEELER, in reply, said that the previous treatment in the case of the younger patient, alluded to by Mr. Benson, was simply syringing the ear. There was evidently disease of the bone. He had not stated they were to trephine without adopting other means; but he had mentioned that if the disease lasted any length of time he would trephine, even in the absence of osseous disease. He alluded to the statistics of the operation, which showed that trephining was not, comparatively speaking, a serious operation. He had seen one where excellent results had been obtained by incising the mastoid process, but in these there was no disease of the cells. Dr. Bennett had asked if he would trephine in

all cases, and if there was a piece of bone diseased at the apex of the petrous portion of the temporal bone, whether there would be any possibility of doing good. He (Mr. Wheeler) doubted if diseased bone could be thus diagnosed; but if the person had cerebral symptoms and running from the ear he would be induced to trephine. The operation was not done often enough.

The Section adjourned.

PATHOLOGICAL SECTION.

President—J. M. PURSER. M.D.

Sectional Secretary—E. H. BENNETT, M.D.

Friday, February 2, 1883.

The PRESIDENT in the Chair.

Exhibition of Specimens.

DR. C. F. MOORE exhibited a living patient, a strong woman, aged seventy-one, suffering from molluscum simplex. Neither her children, nor grand-children, nor any relative had a similar disease. The growths commenced twenty-five years ago, without pain or injury to her health, in size varying from a small shot to that of a small grape, some sessile, some pendulous, growing on the face, neck, hands, chest, and arms, none on the lower limbs.

MR. ABRAHAM showed microscopic mountings of new blood-vessels, inosculating in granulation tissue, among the meshes of a sponge skeleton after grafting.

DR. WARREN showed an example of strangulated obturator hernia which had been discovered *post mortem*.

MR. WHEELER showed an arm amputated for compound fracture, with extreme laceration; also a drawing of an erectile tumour of the forearm, removed successfully from a boy aged sixteen, by excision; also a cast of congenital deformity of the hand, consisting in the absence of the little and ring fingers, with webbing of the middle and index, the thumb being normal.

Penetrating Wounds of the Bladder.

MR. STOKES exhibited the bladder of a patient who had been recently under observation in the Richmond Hospital, suffering from an exceptionally rare form of penetrating wound of the bladder. The patient, a youth, aged sixteen, employed in an iron foundry establishment, was

playing with a companion at vaulting over a pair of long forger's tongs. Failure attended one of his attempts to clear the instrument, and one of the long handles passed through the anus into the rectum, a considerable distance. The boy fell, and the handle of the tongs was promptly removed by his companion. When brought to hospital he was in a state of great collapse. His sufferings were extreme. There was some slight hæmorrhage from the rectum, and the urine, when drawn off, was found deeply tinged. The bladder became tympanitic and swollen, the pain agonising, and there was great vesical irritability. On the third day the patient became delirious; in which condition he remained until released from his sufferings seventy-four hours after the accident happened. The autopsy revealed a perforation of the anterior wall of the rectum, about an inch and a half from the anus. Here the instrument had passed into the bladder through the trigone, and emerged at the fundus of the organ opening into the peritoneal cavity, in which there was a large quantity of sero-purulent fluid. There were well-marked signs of extensive peritonitis. The author referred to the three somewhat analagous cases published by Mr. Prescott Hewett, M. Bueé, and Mr. Bryant, giving the leading particulars of each, and also to the cases mentioned by M. Howel and M. Joubert de Lamballe. The question as to what is the chief factor inducing peritoneal inflammation in these cases was likewise discussed, the author inclining to the belief, from the evidence afforded by several instances of vesical rupture, intra-peritoneal gun-shot wounds of the bladder, and also the experiments of MM. Vincent and Murzel—that urine when first extravasated, and before any decomposition of its constituents takes place, is comparatively innocuous; and the practical deduction would be, provided no distinct contra-indication existed, the desirability, in such cases, of promptly securing a free exit for the urine by cystotomy or laparotomy before the changes take place which, as a rule, lead to such disastrous consequences. In the case the author brought under the notice of the section neither of these operations could be contemplated, owing to the extreme condition of prostration the patient was in when admitted into hospital, a condition from which he never rallied.

In the discussion which followed, MR. CROLY directed attention to the value which he assigned precordial anxiety as a diagnostic symptom of ruptured bladder, a view which was not sustained by the facts of the case which Mr. Stokes recorded.

Microscopic Diagnosis of Phthisis.

DR. PURSER exhibited the viscera of a man who had died of phthisis. In the lungs there were tracts of dense fibrous tissue surrounding the bronchial tubes and pulmonary vessels, and extending to the neighbouring patches of the pulmonary tissue. This was extensively consolidated by fibrous thickening of the alveoli. There were numerous tubercles which

had for the most part undergone fibrous change. Caseation was not present to any great extent, but there was a large cavity due to this cause at the base of the right lung, and smaller cavities at both apices. The bronchial glands were indurated, and contained tubercle. Tubercles were abundant in the liver and spleen, both of which organs were amyloid. In this case the bacillus tuberculosis had been detected in the sputum five weeks before unequivocal signs of phthisis had been detected by the stethoscope.

DR. FINNY said the patient in question, when under his care, was the subject of amyloid disease of the liver. The point of greatest interest on that part of the case was the evidence it afforded, bearing on the view of Schupple and others, as to where amyloid disease began. It was not amyloid degeneration springing from small arteries in the liver, and in which the whole enlargement was due to the liver cells being involved in the disease. Here the liver cells were pushed aside by the growing of the amyloid disease, the result of which was a sort of infiltration which caused atrophy and degeneration of the liver cells, and the destruction of these functions.

DR. WALTER SMITH said this was the first case published in Ireland in which a microscopical diagnosis of phthisis had been made, and that five weeks before the ordinary signs of the disease could be detected by a skilled ear. He did not know whether they could hold that the converse proposition was true—namely, that the absence of the bacilli argued the absence of phthisis. A gentleman came under his care with evidence of an intra-thoracic tumour. The evidences of that disease subsided, and the gentleman got well; but he got a cough, began to expectorate a quantity of purulent fluid, and got thinner, and it became evident that there was mischief in the right lung. He (Dr. Smith) forwarded some of his sputum to Dr. Purser, who, having examined it, informed him that he had been unable to detect any bacilli in it. That was several months ago, and the patient had not since developed any symptoms of phthisis.

The Section adjourned.

MEDICAL SECTION.

President—WILLIAM MOORE, M.D., President K.Q.C.P.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, February 16, 1883.

The PRESIDENT in the Chair.

Exhibition of Living Specimens.

DR. H. C. TWEEDY exhibited two cases of locomotor ataxy.

Specimens Exhibited by Card.

DR. G. F. DUFFEY showed a specimen of Farre's tubercle of the liver; DR. J. W. MOORE a specimen of pulmonary tuberculosis in a girl aged twelve, with secondary infection of the intestines; DR. LENTAIGNE a specimen of ulceration and perforation of the intestines, with microscopical sections by Dr. Scott; and DR. REDMOND a specimen of Bright's disease of the kidneys complicated by peritonitis.

The President of the Academy.

DR. BANKS, President of the Academy, who, owing to domestic bereavement, had been unable to attend any of the earlier meetings, expressed his gratification at having been elected President, and said that to be well thought of by one's fellows, especially by one's brethren in the profession, was a matter of the greatest satisfaction. He had no words to express adequately his acknowledgments. Indeed, he might say in the words of the poet—

“What can idle words avail,
Unless the heart can speak?”

Papers.—1. Sudden Change in the Colour of the Hair and Skin.

DR. W. J. SMYLY read a paper on sudden change in the colour of the hair of an infant. The child was perfectly healthy to all appearance until he was four months old. He was then attacked with acute inflammation, followed by suppuration in the left temporal bone, the symptoms being pain, heat, and swelling about the temporal region, with high fever and profuse perspiration; paralysis of the left side of the face, with lagophthalmos, and of the soft palate. One morning (1st Nov. last) the hair on the right side of the head was discovered to have undergone a remarkable change from its original mouse-coloured hue to a

reddish-yellow. The right eyebrow was similarly affected, and the skin of these parts—as well as that of the right hand—was icteric. The pillow also was saturated with a reddish-yellow perspiration. The abscess, which had formed very slowly, pointed behind the ear, and was evacuated by a free incision. Although the child subsequently became hemiplegic it made a fairly good recovery. The suggestion offered as to the possible cause in this remarkable change of the colour of the hair was that the perspiration, which was of a peculiar colour and probably of abnormal chemical constitution, not only destroyed the original pigment, but also dyed the hair a reddish-yellow colour.

DR. BANKS referred to a case which had come under his notice—that of a young woman. Half of the lashes of one of her eyes became snow-white, which she attributed to the annoyance suffered from the persistent gaze of a “wall-eyed” admirer who had white lashes on the defective eye.

DR. WALTER SMITH related the case of a boy in whom the skin of the lobes of both ears and that of the back of the neck was of a sulphur-yellow, the downy hair being of a bright yellow. The hair of the head was brown. The yellow colouring could be readily removed by a moistened cloth, but no washing could decolorise the skin; nor did ether or chloroform produce any effect. He exhibited specimens of the hair. He also referred to a case of red discoloration recorded by Wilson. After relating the case described by Darwin, in which the hair of a criminal, brought out for execution, turned white in the presence of the spectators, he said he could not agree with Dr. Smyly in ascribing bleaching properties to the perspiration, but did not give any explanation in lieu of it.

DR. CHARLES F. MOORE, MR. LENTAIGNE, the PRESIDENT, and DR. GRIMSHAW also joined in the discussion.

DR. SMYLY did not reply.

2. *Locomotor Ataxy.*

DR. H. C. TWEEDY read a paper on two cases of locomotor ataxy, and exhibited the patients. The first case was that of a pensioner, aged sixty-four, who was admitted into Steevens' Hospital, in 1871, presenting most of the symptoms of the affection—the peculiar gait, the absence of coördination, and the neuralgic pains characteristic of the earlier stages of the disease. He was persistently treated with nitrate of silver in doses of $\frac{1}{3}$ gr. three times daily, and continued the use of the drug at intervals for nearly twelve years, during which time he was again in hospital—during the years 1873–6–82. The ataxic symptoms had completely disappeared; but, from the length of time the silver had been taken, the patient had become argyrised. Attention was invited to the peculiar leaden discoloration of the skin from this cause; and the opinion of the

members was requested as to whether the symptoms clearly indicated a case of tabes dorsalis or one of those rare cases in which the progress of the disease had been arrested and a cure had followed, whether spontaneously or the result of the remedy employed. The second case was that of an engine-driver, aged forty-two, in whom the disease was only of six months' standing. This patient also exhibited most of the phenomena of the earlier stage of the disease—the peculiar gait, partial asynergia, and fulgorant pains along the course of certain nerves; but, in addition, there were consecutive attacks of a cutaneous eruption resembling erythema entirely confined to the left side of the body, and unaccompanied by any of the usually attendant neuralgic pains. There was also a patch of an eruption resembling psoriasis on the back of the left wrist, no similar patch coexisting at the opposite side. Attention was drawn to the fact of eruptions, usually bilateral, appearing only on one side of the body, the connexion between this and similar eruptions occurring as trophic lesions in tabes dorsalis, but accompanied invariably by lancinating pain along the course of the nerves over which the eruptions were found.

DR. BANKS, having seen a great many cases of locomotor ataxy, was of opinion that in a considerable number the disease stood still, and in others appeared to be removed. He had used nitrate of silver with great advantage, and did not participate in the terror some had of its effects in producing discoloration of the skin. He had once seen it occur in a case of epilepsy. He believed in the existence of a syphilitic taint in a large proportion of cases.

DR. GRIMSHAW remembered the case brought forward by Dr. Tweedy. The result of the treatment was admirable.

DR. NIXON agreed with Dr. Banks as to the frequency of arrest, and even occasional cure, of the disease, especially in cases in which syphilis existed. He considered that the skin affections in one of Dr. Tweedy's cases were coincidences, and preferred referring them to a syphilitic origin.

DR. ROBINSON asked whether either of the patients was addicted to the abuse of stimulants?

MR. LENTAIGNE mentioned a case in which Langenbach stretched the sciatic nerve, and the symptoms disappeared. A subsequent autopsy showed the spinal cord to be perfectly healthy.

The PRESIDENT related a case of syphilitic origin, which recovered under the use of iodide of potassium.

DR. HENRY KENNEDY and DR. W. G. SMITH also took part in the discussion.

DR. TWEEDY, in replying, said that in the case which had recovered the man had no syphilitic history. Neither patient had been addicted to intemperance.

Ulceration and Perforation of the Intestines.

MR. LENTAIGNE read a paper on a case of ulceration and perforation of the intestines, which was remarkable on account of the great obscurity of the symptoms. It was that of a man, aged thirty, who had been admitted into Jervis-street Hospital on the 6th of December last, complaining of cough and debility, and who died there on December 19 from peritonitis consequent on perforation of the intestines. After his admission he had been carefully examined by Dr. MacSwiney, physician on duty, but no evidences of organic disease could be found. Both the pulse and temperature were perfectly normal, and the lungs apparently sound. After a few days the man asked leave to go home, feeling perfectly well; but on December 11th, when leaving the water-closet, he was suddenly attacked with all the symptoms of acute intestinal obstruction. These continued unabated until the 14th, when his bowels were freely moved by enemata, after which he had four free motions, passing large quantities of liquid, yellowish-brown fæces. Next day he seemed better, the pain having ceased, and the vomiting only occurring after long intervals. The ejected matters consisted of recently administered food. On the following day all the severer symptoms returned, and the man died on the 19th, eight days after the inception of the symptoms, from obstruction. At the *post mortem* examination, besides the usual signs of recent general peritonitis, there was found a large collection of purulent putrid matter occupying that part of the peritoneal sac which lay in the right inguinal region, the right half of the hypogastric region, and the cavity of the true pelvis. It was apparently localised by the matting of the intestines. On removing the viscera the ileum was found to be ulcerated in its lower part, and perforation had taken place through the floor of one of the ulcers. It was situated in one of the coils forming the boundary of the pus-containing cavity, and was apparently sealed up by adhesive inflammation of the peritoneal coat. The spleen and the mesenteric glands were enlarged. The lungs were apparently healthy. There was no ulceration anywhere else but in the last thirty inches of the ileum. He believed the case to be either one of veiled typhoid fever or of ulceration as the result of a previous attack of typhoid; and he drew attention to the great tenderness and pain over the right thyroid foramen and for a few inches below Poupart's ligament on the inner aspect of the thigh—a condition which, coupled with the symptoms of intestinal obstruction, might easily lead to a mistaken diagnosis of obturator hernia, due to pressure or inflammation of the obturator nerves before their exit from the thyroid foramen.

DR. MACSWINEY said that when the patient in the early stages of his illness was under his care he did not present any symptoms of typhoid fever.

DR. C. J. NIXON insisted on the importance of splenic enlargement in the diagnosis of typhoid fever.

DR. J. W. MOORE said that constipation in those cases was a most unfavourable symptom. The perforation was sometimes produced by over-distension of the intestines, consequent on the formation of gases by the decomposing retained faecal matter. The patient, he considered, had passed through typhoid fever before his admission to hospital.

MR. LENTAIGNE, in replying, agreed with Dr. J. W. Moore that the case was one in which the typhoid had been passed through, and that the perforation was the result of necrosis—a sequela of the fever.

The section adjourned.

SUB-SECTION OF STATE MEDICINE.

President—CHARLES A. CAMERON, M.K.Q.C.P.

Secretary—JAMES FERRIER POLLOCK, M.B., Dubl.

Thursday, February 8, 1883.

The PRESIDENT in the Chair.

Opening Address.

DR. C. A. CAMERON, President of the Sub-Section, delivered an Introductory Address, dealing at considerable length with the subject of public hygiene from the earliest times, and referring particularly to the sanitary laws and their administration in foreign states. In Plato's "Ideal Republic," in the writings of Xenophon, Hippocrates, and in the Theocratic legislation of the Jews, were the earliest references to sanitary laws and the duties of the professor of preventive as compared with curative medicine. In the middle ages little was done to promote the public health. The first General Public Health Act passed in the United Kingdom dealt exclusively with Ireland, and came into operation in 1818—a most valuable Act. The Towns Improvement Act of 1847 also dealt only with Ireland, and some of its sanitary provisions were superior to those of the Public Health Act of 1878. The fatal defect was the purely permissive nature of its provisions. The various Sanitary Acts were reviewed in detail, and praise was given to the Irish Registrar-General for showing the death-rate per one thousand persons in eighteen different classes of society in Dublin in his weekly returns since January last. The sanitary organisations of the chief Continental States and of the United States were fully described. Except in Scandinavia, they were inferior to the British sanitary administration. The municipal authorities had very little power, and the sanitary police were altogether under the control of the Government. In some Belgian and French towns a

municipal bureaux of health had recently been constituted, somewhat on the model of the British Local Boards of Health. In one department of public health—namely, the systematic inspection of food, drugs, and several poisonous colours—the sanitary authorities of France, Germany, Belgium, and Holland were more vigilant and active than is the case in the United Kingdom. In Holland a most severe system of compulsory notification of infective diseases existed.

The Relations between Census Statistics and Health Statistics.

DR. GRIMSHAW, Registrar-General for Ireland, congratulated the Academy on establishing in connexion with it a department of public health. He then read a paper on some points concerning the relations between Census statistics and health statistics. Having referred to the misuse of statistics and their consequent depreciation in the minds of many persons, he dwelt forcibly on two points—first on the errors in calculating death-rates on estimates of population founded on the rate of increase between Census periods. He showed that in Ireland it was wrong to treat the town populations as stationary, as producing errors in death-rate, which, however, were not greater than those founded on estimated populations. He also pointed out that estimates founded on the number of inhabited houses were also liable to serious error. With the view of classifying the population into various social grades or “strata,” he made observations on the value of a “social” census, and said that at the suggestion of the Dublin Sanitary Association such a Census had been compiled for the Dublin Registration District, so that now it was possible to strike death-rates for various social grades of the community in that district. Since the commencement of the present year these death-rates had been struck for each year, and, as the result of the experiment during the four weeks it was in operation, the death-rate was as follows as compared with a total death-rate 30·6 per 1,000 :—Professional and independent classes, 22·45; middle classes, 25·4; artisans and petty shopkeepers, 26·1; general service class and workhouse inmates, 37·2 per 1,000.

The PRESIDENT of the College of Physicians asked whether the increase in the population in 1877–8 depended in any way on the state of the harvest. To him the social aspect of the statistics initiated by the Registrar-General was a new phase and of enormous interest.

DR. MACSWINEY considered statistics of the duration of life of various classes would have a most important bearing upon life assurance. The present life tables worked injuriously to the insurer. From Dr. Grimshaw's statistics it would appear that the actual expectation of life in some classes was much greater than in others, and thus the premium payable on a policy of life assurance, instead of being settled by an estimate based on the general statistics of deaths, would depend rather on the social position of the individual as the important factor.

DR. J. W. MOORE expressed his sense of the importance of the two points in Dr. Grimshaw's paper—first, in regard to the erroneous calculation of the changes in population consequent of the distant periods at which the Census was taken; and, secondly, the tabulation of the social position of the population concerning death-rate. Both points were carefully attended to in certain northern nations, local estimates being made every two years or so, particularly in Copenhagen. He took exception to the grouping of the wives and children of the artisans in the different classes, as erroneous statistics would result. Instance the high mortality among the knife-grinders in Sheffield from the disease called "knife-grinder's rot;" if they distributed the mortality in that particular trade over the wives and children the estimate would be a false one. He would, therefore, group together the wives and children as belonging to the artisans generally, and so with the wives and children of the middle and upper classes. Thus the individuals themselves who bore the heat and toil of the day in the various occupations would form the factors of the death-rate.

The CHAIRMAN thought that to group the wives and children of artisans would involve too great minuteness of detail, and would be unnecessary in presence of the admirable statistics on the mean expectation of life as to persons of all ages, founded on two millions of years of life in connexion with life assurance in the manuals of the Oddfellows' community. Men seldom insured their lives before twenty-one or twenty-two, and from the time a man started at a particular trade until he died there was a certain amount of information as to his mean expectation of life at any particular period; but they had no such information with regard to whole classes of the population, their wives, and children. He thought, therefore, Dr. Grimshaw's classification was admirable. The death-rate of Dublin was, in his opinion, greatly influenced by the relatively large population of poor people in the city in comparison with English and Scotch cities; and if there were statistics like those which the Registrar-General had selected in the last four weeks, there would be data to compare the sanitary condition of Dublin with that of those cities. The income tax of Dublin was greatly exceeded by that of English and Scotch cities of the same population, showing that Dublin was the poorer. Dr. Grimshaw's statistics would in a year or two prove the truth of his opinion.

DR. GRIMSHAW replied.—He did not think the harvest had anything to do with the increased population—an estimated increase in 1876 of 10,528, and in 1877 of 7,613—but that it was due to the labour market in America being then extremely low; and so, when the labour market rose towards the end of 1879, the movement of the population to America increased, and was stimulated by the bad harvest here. As to Dr. MacSwiney's point concerning life assurance, he had asked a number of

people connected with assurance companies whether they really considered the high death-rate in Dublin had any effect in increasing the premium, and they said not, that insurance business paid as well in Dublin as anywhere else. As to Dr. Moore's point, he submitted that the death of a tradesman, for instance, from knife-grinder's rot affected his family, as the family might then starve. The Chairman's point about the income tax he did not consider sound. Income tax was paid by persons of great incomes. There was a large class of persons in English towns with enormous incomes from £20,000 to £40,000 a year, while there were few such in Dublin; and as persons with from 10s. to £2 a week paid no income tax, the amount of income tax was no index of the death-rate. The chances of life to a man's family with £1,000 a year were quite as good as in the case of a man with £100,000. At a certain level of comfort there was no difference in the risk to life. Mr. Wilson, of his office, had two years ago suggested the social classification adopted.

Exhibition of Sanitary Appliances.

Thanks were voted to Mr. W. R. MAGUIRE for having exhibited a most interesting collection of sanitary appliances and models.

The Sub-Section adjourned.

DIPHTHEROID CONJUNCTIVITIS.

DR. JULES FONTAN, in the *Recueil d'Ophthalmologie* for September, 1882, describes a case which he calls *diphtheroid conjunctivitis*. He compares the membrane found in the true diphtheritic conjunctivitis (first described by Bovisson of Montpellier) with the membrane often found in purulent ophthalmia neonatorum, and goes on to show that between these two forms there exists an intermediate one, partaking, in many respects, of the nature of the diphtheritic affection, but without constitutional disturbance, and without implicating any other of the mucous membranes. A microscopical examination of the exudation in his case showed that the membrane was not formed of a simple coagulum of pus in the fibrin, as occurs in the simple membrane of ophthalmia neonatorum, but that it also contained portions of the mucous membrane. One could not, however, find in it the epithelial formations characteristic of diphtheria. Clinically viewed the false membrane, in his case, was one which could be removed after three days, and which did not reappear, either on the conjunctiva or elsewhere, and was accompanied by no disturbance of the general health. Such an intermediate form of membranous conjunctivitis he thinks fit, both from its anatomical and clinical characters, to entitle "Diphtheroid."

A. H. B.

CLINICAL LECTURES ON DISEASES OF THE LOWER BOWEL.

By EDWARD HAMILTON, F.R.C.S.I.; Surgeon to Steevens' Hospital.

LECTURE II.

WE will on the present occasion discuss the subject of inflammations in the vicinity of the lower bowel—the abscess and fistula which so frequently result from them. The clinical history of these affections is most interesting and instructive, as it carries us into a very wide field of general surgical pathology. The masterly description of these inflammations drawn by the graphic pen of Perceval Pott has not been surpassed by any of the more modern authors. He specifies three varieties, which are verified by the experience of all practical surgeons—phlegmonous, erysipelatous, and gangrenous—each accompanied by its own peculiar symptoms, local and constitutional; the first characterised by extreme hardness, great tension, and a brawny feel to the touch, high symptomatic fever—conditions which rapidly subside with the advent of suppuration.

In the erysipelatous form, as its name implies, we have a diffused blush of superficial redness extending over the buttock, with little hardness, while the fever is asthenic in its type. In the gangrenous variety we have constitutional symptoms of the gravest import. The face indicates depressed vital powers; the pulse is frequent and intermittent; the tongue brown; the patient has rigors, nausea, and anorexia. The blush on the surface affords little indication of the mischief underneath the skin, but the characteristic boggy emphysematous feel to the finger denotes at once the gravity of the case, and excites well-founded anxiety as to the safety of the patient. It is, however, of much clinical interest that occasionally the local symptoms of abscess may be so slight as altogether to escape observation until the abscess bursts, and makes its presence known by soiling the patient's dress. They frequently come to our consulting rooms under the impression that they are affected with piles, or they may refer their symptoms to the bladder or urethra rather than the rectum; they remind us of the "*cold abscess*," so devoid of pronounced symptoms, either local or constitutional.

As to their depth from the surface, abscesses in this situation have been divided into those immediately beneath the skin—the "marginal abscesses" of French authors; those in the ischio-rectal fossa, and those in the pelvi-rectal space. I need hardly remind you that the first are comparatively trifling, while the last are of extreme gravity, indeed, compromising the functions of all the pelvic viscera, and bringing the patient's life into great peril. The fact that such abscesses are almost

inevitably followed by fistula, and that this is a most troublesome affection, should urge us to use every effort to accomplish resolution of such inflammations if possible, and, if we fail in this, to obtain a sufficient escape for matter by *early, prompt*, and free *incision*, and the rapid filling up of the resulting cavity; by careful and assiduous dressing; by adequate drainage and antiseptic injections.

Some of these are described as stercoral abscesses, from the idea that faecal matter passes into them through a breach in the mucous lining. I do not think this is at all a common occurrence. No doubt the matter which they discharge when first opened is frequently very foetid, but this may be the case although they do not communicate with the bowel; it is a condition present in suppuration under mucous membranes, as we observe in large gum-boils.

If superficial inflammation is seen sufficiently early it may be dispersed by perfect rest, aperient medicine, and hot fomentations. If the patient can devote his entire time to his case the constant and continuous application of a bladder of pounded ice, moulded to the part, will often succeed, but unless it is applied absolutely incessantly the reaction does more harm than good, and in some subjects it causes more pain than hot fomentations; in no case should the patient be permitted to become costive, as the straining at stool is in itself sufficient to cause the disease, much less to keep it up after it has been established; better use an occasional enema of soap and water than drastic purgatives. In the deeper form much may be done by the decisive application of leeches. To be of use they must be applied in proper number—from six to twelve at a time—followed by fomentation and poultices.

Should we fail in these efforts to stay the inflammatory action, and we find that suppuration is inevitable, it is well not to wait for decided evidence of fluctuation. This may be long delayed, while deep-seated mischief is all the time going forward. A good stout scalpel should be firmly pushed into the skin, its cutting edge directed towards the ischium and its back to the anus, so as to make an incision parallel with the rugæ and deep into the ischio-rectal fat. If matter does not flow the wound should be dilated with the finger and then covered with a large poultice of linseed meal; subsequently a drainage tube should be placed in the wound, which should be carefully injected with carbolic wash every day, so as to facilitate its rapidly healing from the bottom.

The anatomy of the ischio-rectal fossa explains how inflammation, when occurring there, is liable to assume an asthenic type. The cushion of soft fat, so useful in the active function of the bowel, is low in its organisation, deficiently supplied with blood, and unable to sustain the devitalising process of inflammation. When pus has formed as a result of any of these conditions, it has a remarkable tendency to discharge itself into the bowel; the integument covering the fossa, except at the

anal verge, is thick and dense in structure, and determines the matter towards the outer wall of the bowel, into which it will finally open. How beautiful in its wisdom is this provision of nature, that pathological laws govern the direction and course of these collections of purulent matter so that they shall discharge themselves on the skin or mucous membrane, by which they are finally got rid of, while the closed serous cavities, by their pathological instinct, throw out a strong barrier of lymph, by which their progress towards the closed cavities which they guard is checked and diverted.

Now, if you will carry your thoughts to the anatomy of the wall of the rectum, you may remember that, a short distance above the anal opening, there is a strong contractile ring surrounding the bowel—the deep or internal sphincter. By this the wall of the canal is much thickened and strengthened, so that perforation at this situation is much more difficult than either above or below this band; hence we find the matter travelling towards the cavity of the bowel, so as to enter it in either of these directions, constituting a true rectal fistula.

This history of the progress of purulent matter at the side of the rectum should impress on our minds the necessity of making an early opening in all such cases, permitting the free escape of all inflammatory products through the skin before they have time to compromise the intestinal wall. Such a free opening gives immediate relief from local pain and allays the consequent febrile excitement of the system.

As the result of these abscesses, tunnels of various kinds may traverse the soft parts in the direction of the lower bowel, and long-established usage has given them the generic name of *fistula in ano*, and it is not easy to change an appellation which has been handed down to us for so many years; but it would give rise to less confusion of thought if more accurate nomenclature were employed. The abnormal canal may open either on the surface of the skin only, or on the surface of the mucous lining of the bowel only; or it may have two openings—one on either surface; the last (the complete fistula) alone deserves the name; the others are not fistulæ, in the surgical acceptation of that term—they are, strictly speaking, sinuses. In your class books they are designated as (1) blind external; (2) blind internal; (3) complete, to which we must add (4) complex, in which we may have several openings on either surface and channels taking various directions. The word fistula is now so popularised that, when used without any prefix, it always means rectal fistula. Whatever form the disease may originally present, time alone is required to convert it into a true fistula.

The affection is not of necessity attended with much pain, but is a source of intense discomfort—in truth, a terrible worry to a man of refinement. The constant oozing of matter and mucus from the bowel stains the clothes; flatus escapes involuntarily; the constant necessity

for cleansing the parts and providing for the discharge occasions so much discomfort that the sufferer gladly seizes the only hope of relief—surgical operation. I may say the only hope, for many conditions conspire to render this affection for the most part incurable by any other method. The ordinary treatment for sinus which will succeed in other parts of the body will fail here. The constant disturbance to which the parts are subjected by the slightest movement of the body, even the essential and unceasing acts of respiration, the daily process of evacuating the contents of the bowel, the constant flow of mucus along the abnormal canal, the low vitality of the tissues, the depressed state of the *vis viva* in the individual—all co-operate to render cure by the unaided efforts of nature next to an impossibility.

The internal opening of rectal fistula has been the subject of much controversy—first, as to the frequency of its existence; secondly, as to its position; and, thirdly, as to the mode of its production. So far as statistics can shed light on the question we have the authority of Ribes, who gives us a report of eighty cases which he had the opportunity of examining after death. In all these subjects he found that the internal opening could be demonstrated. The frequency of this occurrence led him to look for the cause of fistula in some morbid condition of the mucous membrane; and he fixed upon the suppuration of an internal pile as, in ninety-nine cases out of a hundred, causing the disease. Mr. Lane, of St. Mark's Hospital, records a series of cases submitted to operation, of which forty were complete, twenty were blind external, and two blind internal. In doubtful cases the injection of milk was used to determine the presence of the internal opening. Sir B. Brodie also expresses the opinion that fistula commences as a small ulcer on the lining membrane; and there can be no doubt that such an ulcer, an internal pile, or the lodgment of a foreign body, a splinter of bone, the seeds of fruit, the core of an apple, becoming entangled in some of the numerous folds of the rectum, may cause inflammation and ulceration; matter collecting in the small depression thus formed makes its way slowly but steadily into the ischio-rectal space, ultimately pursuing its course to the surface of the skin. And it is a clinical fact that, in a very large majority of those affected with this disease whom we are called upon to treat, either in hospital or in private practice, the fistula is complete; but we must remember that they are, for the most part, chronic cases in which time has been afforded for the extension of ulceration, which commenced as an abscess, having no opening either on the mucous membrane or the skin, but ultimately presenting both one and the other. A consideration of more practical importance than either the relative frequency or the cause of the internal opening is its situation when it does exist. Ribes states positively that in none of the eighty cases which he examined was the opening higher than five or six

lines from the verge of the anus ; and in many of them it was not so high, being just at the juncture of the skin and mucous membrane, so as to be visible on slight protrusion of the bowel. Velpeau tabulates the result of thirty-five *post mortem* examinations as follows:—In four, the internal opening was one inch and a-half from the anus ; in one, it was three inches ; and in thirty a few lines only from the anal outlet.

This pathological fact teaches us that it is not necessary, as a rule, to make any deep gash in the walls of the intestine, and that surgeons frequently cause unnecessary pain and suffering in searching for the opening higher than it really is. The result of my own observation in the dissecting-room, where we meet with more numerous examples of fistula than in our *post mortem* theatres, is fully in accord with the statements of Ribes, Larrey, and Velpeau. There appears to me to be a spot, definable with anatomical precision, where the deep opening is almost constantly to be found. I mean the crevice between the lower margin of the deep and the inner border of the superficial sphincter. Along this ring the wall of the intestine is especially thin and readily permits of perforation, yielding to the pressure of the matter. Next in point of frequency is at the upper margin of the deep sphincter. I have rarely seen it higher than this, unless where there is a second opening into the rectum. There is an important clinical fact which must not be lost sight of, as it has caused considerable confusion—it is this : the height of the intestinal opening does not definitely fix the height to which the tunnel may extend. We find infinite variation in this respect. The tract may wander away from the bowel far above this point, and, as we see frequently enough, may pass round the gut like a horse-shoe. Hence I think it necessary to include "*complex fistula*" among the varieties of the disease which the student should carry in his mind. (Plate I.)

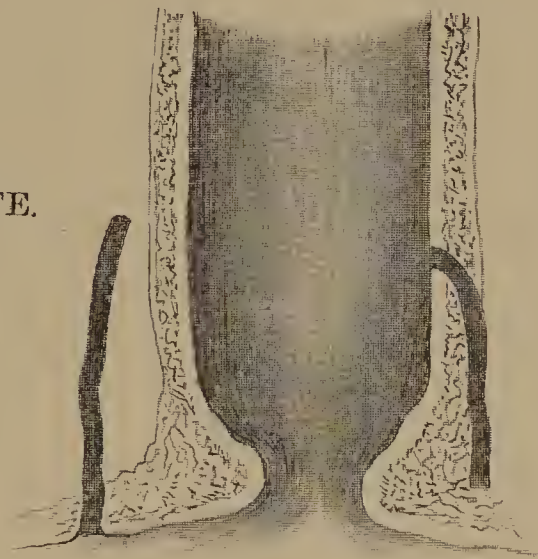
It must never be forgotten that a sinus may exist at the side of the rectum, and may have no further relation to it. It may be evidence of formidable disease higher up in the canal ; it may originate from disease of the spine or pelvic bones, psoas abscess, or disease of the urinary organs ; it may result from stricture high up, remote from the anus. The connexion between these two conditions, stricture and fistula, must never be lost sight of, and it is remarkable how different the relation is here when contrasted with similar affections of the urethra, where we find the fistulous tract running up to the passage behind the stricture, whereas in stricture of the rectum the fistulæ open, as a rule, below the constriction.

The symptoms of fistula are usually expressive enough. There is some pain and uneasiness during and after defecation, a flow of mucus from the bowel, and consequent excoriation of the adjoining surface from the constant moisture ; flatus may escape through the opening ; occasionally a bubble of air may occupy it. Should such indications exist after

FISTULA IN ANO.

INCOMPLETE.

RECTAL SINUS,

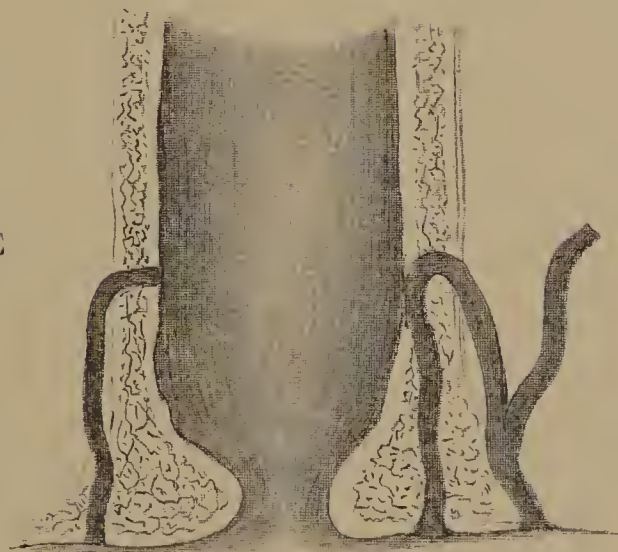


BLIND EXTERNAL.

BLIND INTERNAL.

COMPLETE

RECTAL FISTULA.



SIMPLE.

COMPLEX.

an attack of inflammation, with rigors, they surely point to the existence of rectal fistula. These symptoms are very often attributed by patients to piles. You must, therefore, never be satisfied until you have made a careful examination of the parts. What more melancholy example can we have of surgical imbecility than the man who sits down and by rule of thumb prescribes sulphur electuary and gall ointment in such a case. But, gentlemen, you have no idea of how frequently this is done. We should remember how much these symptoms may be masked by sympathy with neighbouring organs—the bladder and urethra, the uterus in the female. Sometimes an acute abscess of the perinæum will first manifest itself by retention of urine. Our diagnosis can never be complete without a careful physical examination. The information to be gained by exploring the bowel with the finger is simply invaluable, and when conducted with gentleness and ordinary care causes very slight pain or uneasiness. To profit by such an examination you should avail yourselves of every possible opportunity of acquiring the “*tactus eruditus*” and educating your finger to the impressions produced upon it by contact with the mucous membrane in a state of health.

It is, of course, a part of your education to learn the details of anatomy in the dissecting room. I would have you push it further, and study living anatomy in the dispensary and the hospital. Take every opportunity of educating your eye in the outlines of the *living* body. Take, for example, a joint. It is all very well to commit to memory the various processes, grooves, and ridges which exist on the bones entering into a joint, and to understand perfectly the direction of the several ligamentous bands by which they are connected to each other; but when these structures are clothed with skin, areolar tissue, and living muscle, how puzzling it often is, even to the most experienced surgeon, to define the exact nature of a fracture or dislocation, or predicate with certainty the existence of either. Handle, then, these joints in the living subject; accustom yourselves to their shape and outline as the structures lie in their natural deep position; then your eye and finger, duly educated, will quickly detect the least departure from normal conditions.

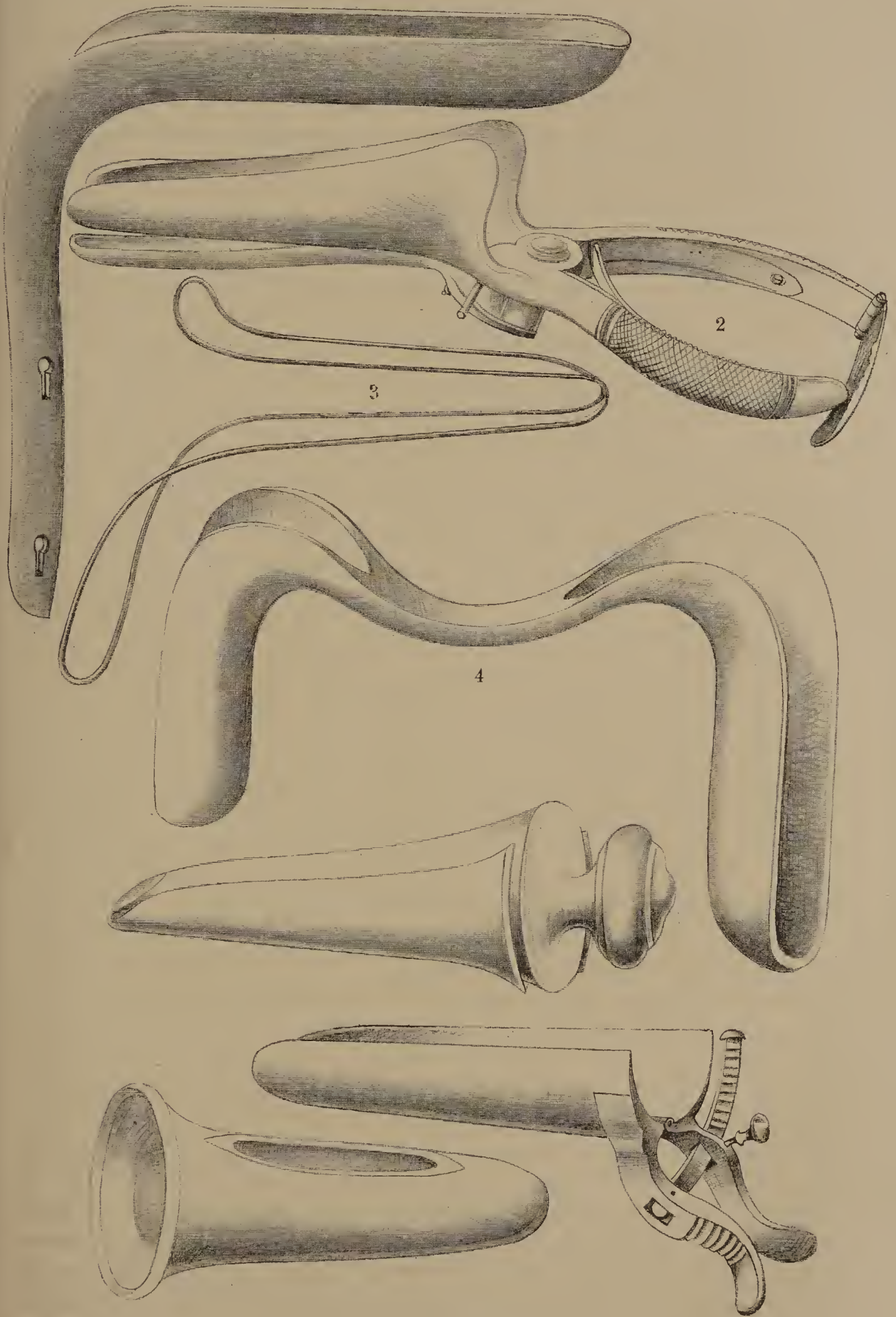
The finger, well oiled, and the groove of the nail filled with soap, should be slowly introduced by a gradual boring movement, and passed fully into the bowel. The act of doing so will give you much valuable information. A resisting spasmodic sphincter indicates irritability caused by ulcer; the lax and patulous anus, with brickdust discharge, indicates advanced malignant disease; soft projecting folds tell of internal piles; a nodulated irregularity should lead you to seek high up for simple stricture; a circular depression, with indurated margin, tender on pressure, marks the position of the ulcer of the rectum; a small thickened point the internal opening of fistula. As a rule, this opening is soft, as

if ruptured. It is said to be more frequently hard and thickened in phthisical subjects. The path of the rectum is now frequently resorted to for the purpose of clearing up the diagnosis of disease of the pelvic cavity, and as an aid to the use of the catheter in difficult cases—it is as the sounding-lead to the sailor, enabling him to avoid unseen shoals and hidden rocks—guiding the point of the instrument through the narrow channel of the urethra into the bladder. In this instance, however, you gain something more, for the presence of the finger distends the sphincter and tires out all the perinæal muscles. At first we find every one of them thrown into commotion, every attempt to advance the instrument causes fresh spasm, until at length the muscles are fatigued, and the chief source of trouble and difficulty completely overcome.

Should still further examination be required we must use the speculum ani. The modifications (Plate II.) of this instrument are very numerous—some (as No. 3), made of strong wire, are exceedingly simple, and others (as No. 2) complex enough to delight the heart of the most artistic mechanist, but in practice utterly worthless, painful to the patient, and unsatisfactory to the surgeon. In the use of instruments always select the simplest which will accomplish the object; they are, as a rule, the most efficient. That which you have seen in use most generally in this hospital, both for exploring the rectum and operating for fistula, is a simple lithotomy gouget. It is shaped for slipping along the finger, and by altering its position you can examine in detail every portion of the rectal wall. The little lamp used in aural surgery will be a valuable help in the absence of sunlight. By using two such specula, one on either side of the finger, you can dilate the anal opening to a considerable extent and get a complete view of two opposite sections of the bowel. By changing the position of instruments the remaining segments may be brought into view. You have on the table a set of specula which act on this principle (No. 1). They are figured in “Bryant’s Surgery.” I have in this way used the smaller end of Sims’ speculum for vesico-vaginal fistula (No. 4). Test each of these instruments for yourself, and employ that which gives you the most satisfactory view of the parts.

We cannot leave the subject of exploring the rectum without alluding to the practice of introducing the entire hand into the bowel, which is now a recognised surgical proceeding. I need hardly say the practice is not adapted to cases of disease of the rectum itself—in fact, such a condition would be a strong indication against undertaking it at all. In a state of anæsthesia, with great care and patience, the entire hand, more especially in the female, may be passed into the bowel, so as to examine parts above the brim of the pelvis, the kidney, the aorta, tumours of different kinds. This operation should not be lightly undertaken, as it is by no means free from danger, the bowel may be lacerated, and diffuse

1



inflammation of the pelvic areolar tissue may be set up. It requires the utmost care and gentleness. A case related by Nolet, surgeon to the King of France, is one of the earliest on record of this operation. A monk, in order to cure a colic, introduced a bottle of Rhenish wine, which slipped from his grasp, and became lodged in the bowel. A "wise woman" attempted to introduce her hand, but failed. This was subsequently accomplished by a young lad trained to it, and the bottle was removed. Thiandière relates a case where he introduced finger after finger until the entire hand was passed into the gut, for the removal of a forked stick, which had been designedly pushed into it.^a

In order to facilitate these explorations of the rectum, Professor Van Buren, of Bellevue Hospital, strongly advocates the forcible dilatation of the sphincter, so as to induce temporary paralysis, rendering the anus soft and unresisting. It is best accomplished by inserting the thumbs into the bowel, while the palms are placed upon the buttock. We have thus enormous power of divarication. I need scarcely say such a proceeding demands the full effects of anæsthetics.

You may remember, in a case of hæmorrhoids on which we operated lately, the patient, a female, declined to have ether, and endured the operation without its aid with wonderful fortitude.

Surgeons differ as to what is the most suitable position in which to place the patient for this examination or for operation—the prone, the supine, or on the left side. I give the preference myself to the last. The patient being placed on the left side, the thigh of that side should be secured to the table by a strap or broad flannel band; the right knee should be flexed to the utmost, and secured in this position by a strap or band round the neck of the patient. Many surgeons prefer the prone position and the use of Clover's crutch, as for lithotomy.

We have now to discuss a most interesting and important point in pathology—the connexion which, from the earliest records of surgery, has been alleged to exist between pulmonary consumption and rectal fistula, and the hypothesis that they mutually re-act one upon the other. We must start with the admitted fact that these two conditions frequently co-exist, and I think we may fairly ask to assume that the same low state of the system which predisposes to one will aid in the development of the other. When we advance beyond these two postulates, we find the ground becoming more uncertain; we get into the region of dogmatic assertion, and find ourselves hampered with the trammels of long-established authority tacitly recognised and almost unquestioned. It has long been a canon of surgery that you should never cut a fistula if you have any suspicion of the existence of phthisis; that the discharge from it acts as a derivative—a safety-valve which keeps in check the lung trouble, that this will run its course with intensified rapidity if the

^a Bulletin Gen. de Therapeut. Janr., 1835.

purulent secretion be interrupted. Modern surgeons are inclined to accept this dictum *cum grano salis*, and might not reason suggest the question—Is a man with a weakly constitution better off with two cachectic diseases than with only one? and certainly we can easily anticipate the answer which common sense would give to the query. We must, however, keep distinctly before us and not confound the early and the advanced stage of the lung disease. I never hesitate in the early stage to relieve my patient of one source of trouble and suffering—of one drain on the resources of an enfeebled system, and cannot say I have ever seen untoward results from the arrest of the discharge. In the advanced phthisis the patient is not in a condition to be submitted to any surgical operation, however trifling, which can possibly be avoided, and we have further to encounter the unfortunate occurrence that the wound which we make may never heal, leaving a much larger surface for the secretion of purulent matter, and thus bring both operation and operator into disrepute.

Having determined on the operation for fistula, there are some matters which require attention, and I cannot too forcibly impress on you the important fact that on little points of detail, each in itself insignificant, the success of most surgical operations depends. These may escape the notice of lookers-on, but neglect of them will surely bring with it its own punishment. The surgeon should, if he wishes to be a successful operator, attend to them himself. On the day previous the bowel should be cleared by a dose of, say, 6 drachms of castor-oil with 2 drachms of tincture of rhubarb, and on the morning of the operation an enema of plain warm water should be administered. Cutting a fistula seldom demands the use of anæsthetics, unless in very nervous individuals, some of whom insist on having them. The external opening should be sought for. This may be close to the verge between two of the rugæ; it may be concealed by a sentinel papilla, such as we see leading to cloacæ over diseased bone; or it may be any distance out to the tuber ischii.

Velpeau's probe director being passed through the fistula until it enters the bowel, the forefinger, well oiled, should enter the rectum; by gentle manipulation the point should be hooked down until it projects through the anus. The instrument having a flat handle can be securely maintained with the groove in the proper position. A strong sharp-pointed knife should be rapidly passed along this, dividing the tissues bridged upon it. Should any difficulty exist in finding the internal opening, the search may be assisted by the finger in the rectum.

The proposal to inject ink or milk for this purpose can seldom be necessary to anyone who has any use of his hands, and it only complicates and prolongs the operation.

Now, gentlemen, you may ask me the question—Does it make any difference whether we introduce the finger or the probe first? I believe

it does make a great deal of difference, both to the surgeon and to the patient. The finger, if introduced first, must press the walls of the fistula together, and by thus closing it obstruct the passage of the probe along its track.

The operation of Pott consists in the introduction of the finger, then the passage of a probe-pointed bistoury along the fistula, hooking it out through the anus, and cutting the tissues lying over the edge of the knife. This method is open to three objections—the edge of the knife may touch the fistula and cause the patient to start, the knife (if of ordinary construction) may break, the surgeon may cut his finger.

Should the inner opening be too far from the verge of the anus to admit of hooking down the probe, a lithotomy gouget may be slipped over the finger, so as to protect the opposite wall of the gut, and the division may then be effected along the groove of the director. If assistants are not to be had—as may often happen in country districts—a large tallow candle may be passed into the bowel, and the knife, having been pushed along the fistula, may be plunged into it, dividing the necessary tissues, without any risk of wounding the opposite wall.

In cases of “complex” fistula, or in those where the track runs very far from the bowel, it is not necessary to divide all the parts intervening between it and the mucous membrane. Such a proceeding would sometimes involve a dangerous gash in its wall, and might be followed by a very troublesome result—incontinence of fæces.

Should there appear to be no internal opening, and the probe is felt through the thin mucous membrane, it is good practice to push it through, making an internal opening, and then completing the operation. In cases of complex fistula it is not advisable to lay all the channels open by extensive incision. A free outlet may be made for treatment by injection and drainage. The operation for fistula may then be completed.

After operation the wound should be lightly dressed. A small piece of lint, well oiled, should be passed first into the bowel, and from that into the wound, so that it shall lie in it from top to bottom, through its entire extent. Now, it makes all the difference whether you pass the lint into the wound or into the bowel. In the former case you are likely to pass the pledget obliquely through the lower part of the cut into the rectum, leaving the upper part to heal by direct union, and thus lay the foundation for a return of the disease. The application of a bladder of ice or a cold sponge gives great relief from the smarting pain and diminishes the likelihood of hæmorrhage. An instrument has been devised for irrigating the rectum with cold water, but the ice bag is more effectual.

The operation for fistula may be followed by untoward results; hæmorrhage has occasionally caused both alarm and trouble, tetanus has caused a fatal termination, and inflammation of a low type may set in,

accompanied with great depression ; the disease extending to the mucous membrane of the intestine, as recorded by Sir Benjamin Brodie, indicated by hiccough and intermittent pulse—symptoms which may not supervene until the wound has been almost healed, but which must fill the mind of the surgeon with anxiety and alarm. It will sometimes happen, without any apparent cause, that the wound will not heal, discharging constantly a small quantity of thin purulent matter. It must be stimulated with a probe coated with nitrate of silver, and the reparative powers of the system improved by change of air, tonics, and nutritive food.

Some patients have such a dread of any surgical operation in which a knife must be used that they will submit to any other proceeding, however painful or protracted. Again, in those who are subject to “hæmophilia”—the hæmorrhagic diathesis—“bleeders,” as they are quaintly termed—the use of cutting instruments requires very great caution. From some hereditary condition they bleed from the slightest wound ; the blood is very slow to coagulate, so that the process of natural hæmostasis is delayed to an alarming degree. Hence, we are driven to resort to other expedients, such as tying the supervening bridge with a silk ligature, with the elastic ligature, or dividing it with the *écraseur* or hot wire. An aneurism needle, an eye probe, or (what is better than all) a loop of surgical silver wire can be passed through the fistula, hooked out through the anus, threaded and then withdrawn ; the thread will act as a conductor for whip cord ; the chain of the *écraseur* or the elastic string, the steady strain of the elastic ligature, accomplishes the necessary division in a short space of time. We cannot, however, say that it is *cito, tuto, et jucunde*, for the process is exceedingly painful, the sufferings of the patient protracted and I have seen alarming diffuse inflammation bring life into imminent peril.

The galvanic cautery is a means of operating much more to be commended in cases suitable for it, and possesses the great advantage that in indolent fistula, where there seems very little action in the parts, the hot iron acts as a beneficial stimulus, exciting vigorous and healthy action in the parts. Gerday has proposed a clamp for fistula, the use of which seems clumsy, tedious, and painful.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F.M.S.

VITAL STATISTICS

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, January 27, 1883.

Towns	Population in 1883	Births Registered	DEATHS REGISTERED			DEATHS FROM SEVEN ZYMOTIC DISEASES							Deaths from Phthisis	DEATH-RATE per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		From all causes	From seven Zymotics
Dublin, -	349,685	820	816	146	218	-	-	1	-	40	24	10	93	30·3	2·8
Belfast, -	214,022	547	487	91	80	-	7	19	-	24	10	21	62	29·6	4·9
Cork, -	80,124	191	171	19	54	-	-	-	1	1	1	4	20	27·8	1·1
Limerick, -	38,562	90	90	12	34	-	-	-	-	-	3	1	8	30·4	1·3
Derry, -	29,162	70	71	11	13	-	1	1	-	-	2	1	6	31·6	2·2
Waterford,	22,457	57	48	8	18	-	-	-	-	-	5	2	3	27·8	4·1
Galway, -	15,471	31	38	10	9	-	-	-	-	2	2	1	4	31·9	4·2
Newry, -	14,808	34	31	3	9	-	-	1	-	-	-	2	8	27·2	2·6

Remarks.

The occurrence of warm weather towards the close of December and a continued absence of severe cold throughout January kept down the mortality to the usual winter average, which, however, is far too high in the Irish towns. The death-rate in the eight selected towns ranged from 31·9 per 1,000 of the population annually in Galway to 27·2 in Newry. In Dublin it was 30·3 and in Belfast 29·6. In the sixteen principal town districts in Ireland the death-rate was 29·9 per 1,000 per annum, compared with 22·5 in twenty-eight large English towns (including London, in which it was 20·9), 30·5 in Glasgow, and 21·4 in Edinburgh. Deducting the deaths of persons admitted into public institutions from localities outside the district, the death-rate of the Dublin registration district appears as 29·9 per 1,000 annually, and that of the city proper as 34·1.

Zymotic affections caused a considerable mortality in Belfast (4·9 deaths per 1,000 annually), Galway (4·2), and Waterford (4·1). In Dublin the death-rate from these diseases was 2·8, against 2·7, 2·0, and 1·8 in the three preceding periods.

In the Metropolitan Registration District 820 births and 816 deaths were recorded. The latter number compared favourably with the return for the four weeks ending December 30—namely, 858 deaths. The deaths of infants under 1 year rose from 144 to 146; those of persons aged 60 or upwards fell from 249 to 218.

Seventy-nine deaths from zymotic diseases were registered.

The increased mortality from whooping-cough is the most striking feature in the statistics of this class of maladies. Of the 79 deaths—a number, by the way, falling short of the average, 160, by one-half—no less than 40, or more than 50 per cent., were attributed to whooping-cough. Thirty-eight of the victims were under five years of age; twenty of them were infants under one year. Only one death from scarlet fever was registered. The fatal cases of fever fell from 33 to 24, of which 11 were ascribed to typhus, 12 to enteric, and 1 to continued fever of ill-defined type. In Belfast whooping-cough, scarlet fever, and measles were still rife, but the deaths from scarlet fever fell from 55 to 19, while those from whooping-cough rose from 12 to 24. Diarrhoea caused as many as 21 deaths in Belfast—a very high figure for mid-winter.

Pulmonary consumption cut off 93 lives in Dublin, 62 in Belfast, and 20 in Cork. Of 31 deaths registered in Newry, 8, or about 26 per cent., were referred to this disease.

Diseases of the breathing organs caused 222 deaths in Dublin, compared with a ten-years' average of 251·1 in the corresponding period. To this number of deaths bronchitis contributed 172 (average = 186·2) and pneumonia 28 (average = 33·0).

On Saturday, January 27, the number of cases of the chief epidemic diseases under treatment in the principal Dublin hospitals were—small-pox, 0; measles, 2; scarlet fever, 12; typhus, 64; typhoid, 21; and pneumonia, 8.

The mean temperature of the four weeks was 43·4° in Dublin, 41·7° in Belfast, 45·2° in Cork, 41·6° at Greenwich, and 39·2° in Edinburgh.

It is to be noted that Table VIII., in the Weekly Report of the Registrar-General for Ireland, has been reconstructed so as to show in five general classes and eighteen groups the *occupations* or *social position* of the persons whose deaths are registered week by week, the annual death-rate represented by the deaths registered, and the number of deaths at each of six periods of life and from each of the principal causes of death. The five classes are—(1) the professional and independent class; (2) the middle class; (3) the artisan class and petty shopkeepers; (4) the general service class; and (5) inmates of workhouses. This classification cannot fail to prove of great advantage in demonstrating the portion of the community on which Death levies the heaviest toll.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of January, 1883.*

Mean Height of Barometer,	-	-	-	29·729 inches.
Maximal Height of Barometer (on 22nd at 9 p.m.),	-	-	-	30·437 „
Minimal Height of Barometer (on 25th at 9 50 p.m.),	-	-	-	28·573 „
Mean Dry-bulb Temperature,	-	-	-	42·7°.
Mean Wet-bulb Temperature,	-	-	-	40·8°.
Mean Dew-point Temperature,	-	-	-	38·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·237 inch.
Mean Humidity,	-	-	-	85·8 per cent.
Highest Temperature in Shade (on 1st),	-	-	-	55·7°.
Lowest Temperature in Shade (on 7th),	-	-	-	30·4°.
Lowest Temperature on Grass (Radiation) (on 7th),	-	-	-	27·0°.
Mean Amount of Cloud,	-	-	-	59·9 per cent.
Rainfall (on 20 days),	-	-	-	2·679 inches.
Greatest Daily Rainfall (on 24th),	-	-	-	·676 inch.
General Directions of Wind,	-	-	-	S.E., S.W., W.

Remarks.

An open, rainy, stormy month. The mean temperature (42·7°) was 2·0° above the average of the preceding eighteen years, while the rainfall (2·679 inches) and rainy days (20) were also both above the average—2·255 inches and 16·9 days. From the 4th to the 18th a system of high atmospherical pressure lay over Scandinavia, and this determined a prevalence of S.E. winds in the British Islands, with clouded skies and moderately low temperature in Great Britain, rains and rather high temperatures in Ireland. New Year's Day was mild, and in Dublin the thermometer rose to 55·7°. On this day the maximal temperature at Biarritz in the S.W. of France was 73°, but at Haparanda, on the Gulf of Bothnia, it was only 3°! On the 2nd a sudden bourrasque passed quickly across Ireland, causing rain and fierce squalls for a time.

In the second week south-easterly winds prevailed continuously, owing to the presence of an anticyclone over Northern Europe and the passage of a series of depressions in a northerly or north-westerly direction outside the Atlantic coasts of Ireland. The cold anticyclonic air condensed the vapour of the warm moist air of the cyclonic systems, and densely clouded skies, and damp, gloomy, very rainy weather were the result. On the Continent the S.E. winds were, on the contrary, attended with clear skies and bright, dry, frosty weather.

Although remaining open and unsettled the weather underwent an important change in the third week. Thus the area of high pressure which had so long existed over Scandinavia gradually dispersed, and the barometer became high over the S.W. of Europe (the Peninsula and

France). Consequently the S.E. winds disappeared, and S.W. to W. winds took their place, the amount of cloud diminished, and intervals of fair bright weather were enjoyed.

From the 23rd inclusive the weather was broken, stormy, and chiefly wet. Several deep depressions travelled across the United Kingdom from S.W. to N.E. and from N. to E., causing sudden and extreme variations in atmospherical pressure and in temperature, and violent gales at times. One of these cyclonic systems was accompanied with a downpour of rain and hail in Dublin on the 24th. After a brief interval of clear, cold weather, another and much deeper depression advanced across Ireland from S.W. on the 25th. In Dublin the barometer fell more than an inch in 13 hours—from 29·618 inches at 9 a.m. to 28·573 inches at 9 50 p.m. Heavy S.E. gales sprang up at 5 p.m., being followed by a calm interval as the cyclonic centre approached, and ultimately by exceedingly strong westerly winds. Next day there were squalls of snow and hail.

On the 31st a deep depression passed eastwards over the Bay of Biscay and France. It equalised atmospherical pressure in Ireland, where the weather became temporarily fair, clear, and frosty.

In Dublin an aurora was seen on the 3rd; solar halos were seen on the 28th, 29th, and 31st; lunar halos on the 18th and 21st. Hail fell on the 24th, 26th, and 29th; sleet or snow on the 25th, 26th, 29th, and 30th. There was more or less fog on the 6th, 7th, 20th, 22nd, and 31st.

HÆMOPHILIA.

DR. THOS. D. DUNN reports a number of cases of this disease in the *American Journal of the Medical Sciences* for January, 1883, from which he draws some interesting conclusions. Thus, he shows, that sex is an important predisposing cause in hæmophilia, females being much less prone to the disease than males, and in women, also, the danger to life is much less marked; the females, however, of bleeder families, even though themselves exempt from the disease, are much more apt to transmit the tendency to hæmorrhage to their children than are the males, even when themselves bleeders. Dr. Dunn also points out that there are three forms of the disease: 1. The aggravated form, in which there is a tendency to severe spontaneous, traumatic, and interstitial hæmorrhages, associated with swelling of the joints. This form, seldom seen in females, generally lasts throughout life, and usually is the cause of death. 2. The intermediate form has no tendency to the joint affection or traumatic hæmorrhages, but frequent spontaneous ones from mucous surfaces and subcutaneous ecchymoses. This form frequently disappears at puberty. 3. The third form is lowest in degree, and seen only in females; it manifests itself in ecchymoses, and in early and prolonged menstruation.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

TUBERCULOSIS AS MANIFESTED IN THE LARYNX.

DR. J. SOLIS COHEN contributes a valuable paper on this subject to the January number of the *American Journal of the Medical Sciences*. Dr. Cohen does not accept the statement that the early presence of miliary tubercle could be detected in the mucous membrane of the living larynx; and that the entire progress of the tuberculous process could be studied from time to time in the laryngoscopic image. And small globular or semiglobular nodules, pin-head or thereabout in size, yellowish in tint, seen isolated or clustered at different portions of the laryngeal mucous membrane, were attributed to accumulations of miliary tubercle. The customary destructive metamorphosis of these bodies, long before the death of the patient, prevents verification or denial of their initial tuberculous character upon positive premises. By prolonged observation, however, it has become demonstrated that these tuberculous-looking nodules always occupy localities normally beset with mucous glands; whence the inference has arisen that they are not tubercles; but are rather hypertrophically distended mucous glands, filled, by occlusion of the orifices of their ducts, with accumulated products of secretion and desquamation; inflamed, perhaps, by some specially irritative quality in the hyper-secretions of the coexisting chronic catarrhal laryngitis. The ultimate destruction of these glands results chiefly from necrotic inflammatory processes set up by the pressure of tuberculous infiltrations around them and between their individual acini. In this manner follicular ulcerations are produced whose racemose configuration so closely resembles the crenated margins of some tuberculous ulcerations, as to render it often impossible to distinguish one from the other, save under the lens of the microscope. Dr. Cohen's entire practice has given him but three examples of even presumptive primary tuberculosis of the larynx. On the whole, however, he is inclined to the belief that cases of so-termed primary tuberculosis of the larynx may be relegated to the category of secondary tuberculosis, commencing very early and running an unusually acute course. *Secondary tuberculosis* of the mucous membrane of the larynx presents us with two stages: (1) that of infiltration; and (2) that of ulceration. While as regards the glands, to ulceration of which a tuberculous character has been so much attributed both by many clinicians and not a few pathologists, though they are not directly involved in the tuberculisation, as a rule, they undergo, when implicated, two

processes of infiltration simultaneously. 1. *Inter-acinous*, i.e., a great increase of round cells in the inter-acinous connective tissue; or infiltration between the acini. 2. *Intra-acinous*, i.e., interstitial increase of round cells; infiltration within the acini.

FERROCYANIC TEST PELLETS AS A CLINICAL TEST FOR ALBUMEN.

DR. F. W. PAVY communicated to the Clinical Society, February 9th, 1883, a paper, of which the following is an extract:—Yellow prussiate of potash and acetic acid, employed together, have long been known to furnish a valuable test for albumen. Citric acid may be made to take the place of acetic acid, and thus a test capable of being kept and used in a solid form is supplied. The precipitant of the albumen is ferrocyanic acid, and this is liberated just as effectually by citric as by acetic acid.

Acting under Dr. Pavy's directions Mr. Cooper, of 58 Oxford-street, London, W., has produced a pellet which seems to supply all that can be desired. Its components are the sodic ferrocyanide, and citric acid. Grounds exist for the employment of the sodic instead of the potassic ferrocyanide. All that is necessary in using the pellet is to crush it to a powdered state, within a folded piece of paper, with a silver or other coin from the pocket, or in any other way that may suggest itself, and to run the powder into an ordinary sized test-tube, and pour in the urine to be examined to the height of about an inch. On simply agitating freely, without the application of heat, a precipitate will immediately, or almost immediately, appear when albumen is present. The test is so delicate, that the smallest amount of albumen gives rise to a distinctly recognisable opalescence, and with a larger quantity a dense white precipitate is produced. Instead of crushing the pellet it may be broken in half, or placed in a whole state in the urine. Used in this way it takes a minute or so for it to be dissolved, and the reaction to be produced.

An estimate may be formed of the amount of albumen present by allowing the precipitate to settle, and reading off its height in proportion to the contents of the tube, in the same way as is done after the application of heat. As no employment of heat is required in the application of the test, it is not necessary that a test-tube should be used. A wine-glass or medicine-bottle will answer instead, and the quantity of urine should be kept down to about that recommended when a test-tube is used. Enough acid exists in the pellet not only for liberating the ferrocyanic acid from the ferrocyanide, but for more than neutralising the alkalinity that is likely to belong to a specimen of urine limited to the quantity which has been recommended to be taken. Through this circumstance the test acts equally well with alkaline as with acid specimens of urine.

Phosphates do not interfere with the validity of the reaction given by the test. They not only are not liable to be precipitated by it, but the

acid present will promote the solution of phosphates already deposited. Should the urine be turbid from lithates, it must be cleared by warming before the test is employed. A number of ways in which this can be done will readily suggest themselves, without recourse to the use of a spirit-lamp, where no spirit-lamp happens to be at hand.

If thought proper, the test may be used in the same manner as some persons are in the habit of employing strong nitric acid—viz., by bringing the specimen and the test into contact with each other without admixture, and looking at the line of junction for the precipitate. Thus used, the pellet should be dissolved in a little more than sufficient water to cover it, and the urine then allowed to flow gently down the side of the test-tube until a stratum of about half an inch in height has collected. The lamina of precipitate which is formed from specimens containing a minute amount of albumen comes out denser and more sharply defined than with nitric acid. Further, if the contents of the tube be afterwards shaken together, a diffused precipitate is visible; whilst in the case of the strong nitric acid the precipitate disappears. With urine containing oleo-resinous matter, consequent upon the administration of an oleo-resin medicinally, it is known that nitric and other acids occasion a precipitate. The same will naturally occur with the ferrocyanic pellets, and this is the only fallacious indication that Dr. Pavy is at present aware belongs to the test. Error from this cause, whenever the conditions permit it to be presented, must be guarded against in the same way as has been hitherto done under the employment of nitric acid.—*Brit. Med. Journal*, Feb. 17, 1883, p. 308.

THE ADVANTAGES OF A DRY LOCAL TREATMENT IN OTORRHŒAL DISEASES.

ONE of the greatest hindrances to cure in an ear disease accompanied by otorrhœa, whether the disease be due to inflammation in the auditory canal or middle ear, is the presence of granulations and polypoid growths. Yet one of the oldest forms of treatment of otorrhœal disease has been by copious syringing and instillation of various fluid medicines. Hence, in such treatment of this class of aural diseases, moisture has been repeatedly applied to, and kept in the ear, a naturally heated locality. Now as heat and moisture tend to promote granulations and keep up a discharge, it is very apparent that a moist treatment of otorrhœa in many instances has a tendency to keep up rather than to check the morbid discharge from the ear. On these grounds, therefore, Dr. Charles H. Burnett, in a paper with the above title, in the *American Journal of the Medical Sciences* for January, 1883, holds that the syringe and all forms of drops should be omitted from the home-treatment by the patient in cases of otorrhœa. The most the patient should be directed to do is to dry his ear according to its need, by running into the canal and down to the fundus a twisted pencil of absorbent cotton. The surgeon is to use the syringe only when it is absolutely necessary to remove by it the

matter from the ear, and thus prepare the organ for the application of medication by his hand. This latter part of the treatment should consist in the blowing of powders into the ear. Of these, Dr. Burnett recommends one prepared by triturating equal parts of tincture of *Calendula officinalis* with boracic acid (gr. to minim), allowing evaporation, then rubbing one part of the thus calendulated boracic acid with one or two parts of pure boracic acid. Alum should not be used, on account of its tendency to produce furuncles. Comparative tables are given, which show that by the dry method of treatment the average duration of treatment may be shortened from 212 days under the old plan, to 34 days by the dry method.

THE ANTISEPTIC AND PHYSIOLOGICAL ACTION OF RESORCIN.

FROM some experiments made by Dr. W. Platt (*American Journal of the Medical Sciences*, January, 1883) it appears, taking the *minimum* time in each series, that bacteria developed in 20 c. c. of urine exposed to favourable conditions, and that 0.050 grm. of resorcin has no appreciable influence, bacteria developing within eighteen hours. Twice that quantity (0.103) kept urine free from bacteria twenty-four hours, six hours longer; while 0.150 deterred their development to four days, urine without any addition showing bacteria within eighteen hours. If urine be *boiled*, organisms are found usually considerably later, forty-six to sixty-five hours. 0.050 gramme of carbolic acid hinders development of other *living organisms* (large enough to be detected by a power of 550 diameters) in boiled urine at least twelve days, bacteria eighteen days, the usual bacillus not developing at all. While 0.150 of *resorcin* (about $2\frac{1}{2}$ grains) hinders development of bacteria four days, one-third that amount of carbolic acid preserves a similar amount of urine free from organic life, under similar conditions, three times as long. Some experiments made to determine the physiological action of resorcin, showed that in six warm-blooded animals it caused—1. Restlessness and trembling. 2. Rapid respiration very early in rabbits. Early and very marked after a lethal dose in one dog, later after a lesser, but fatal dose, in another. Not marked after non-lethal doses. 3. Staggering, unsteady gait, loss of coördination, especially in hind limbs, present early in all the animals excepting one rabbit where a small dose was exhibited. 4. Twitching of muscles, especially of hind limbs, constant in all. 5. Clonic contraction of nearly all flexors and extensors of body, more especially of those attached to the pelvis and shoulder. 6. In the animals that died, the imitation of the natural running or hopping movements before death, as the animal lay upon its side, was striking.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VI.—*Sudden Death in Pleurisy.*^a By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Fellow and Censor, K.Q.C.P.; Senior Physician to the Meath Hospital and County of Dublin Infirmary.

THE subject on which I propose to offer a few brief remarks—viz., that of “Sudden Death in Pleurisy”—is rather of an abstract nature, but yet one which may possibly present features of practical interest from a medical, pathological, or surgical point of view. Complicated or secondary pleurisy is not referred to in these observations, for the essential feature in the conception of the term sudden death is the unexpectedness of the event relative to the previous condition of the individual. From time to time cases of unexpected death in pleurisy occur, and are debated upon, not always with much more result than an impression that the medical attendant has been unlucky, and a conclusion that the results of pathological investigation of the causes have been negative.

The opinion that uncomplicated pleurisy is a disease which need not occasion much anxiety, particularly in the absence of dyspnoea, is such a general one that the shock of sudden death under these circumstances is felt to be especially rude. This opinion—that there is an absence of all danger in simple pleurisy—may be, to some extent, founded upon the law laid down by Louis,^b adopted

^a Read before the Dublin Biological Club, Tuesday, January 30, 1883.

^b Trousseau. Clin. Med. Vol. III., p. 198.

by his pupils, and re-echoed by numerous physicians, to the effect that pleurisy is never an immediate cause of death—a law, be it noted, which was founded on a series of 150 cases of simple pleurisy which terminated in recovery.

The thesis of Dr. Henri Lacaze-Duthiers,^a which appeared as long ago as 1851, has demonstrated absolutely that, notwithstanding the famous law of Louis, it is possible to die, and to die suddenly, from acute pleuritic effusion.

It has been well remarked that “pleurisy is a disease full of surprises;” and certainly a fatal termination, when least expected, must generally prove a surprise of a most dismal kind.

A very moderate degree of research in the literature of the subject will show that sudden death may occur in pleural effusion, independent of paracentesis, even in cases not characterised by the existence of excessive secretion. It will also show that the operation of tapping, however carefully performed, may be followed by a suddenly fatal result. It can be easily ascertained that pleural effusion, whether tapped or untapped, has proved unexpectedly and suddenly fatal. I do not intend to occupy time in adducing details of cases in support of these propositions, with which the members are, no doubt, quite familiar. I am also ready to admit that I have not myself met with any number of such cases, at all events since the early removal of effusions in the pleura has been recognised as proper treatment, and the improved means of doing so have become cheap and simple; but anyone interested in the subject will find many details in a paper “On Sudden Death in Pleuritic Affections,” by Dr. Leichtenstern,^b as well as in the thesis of Lacaze-Duthiers, already referred to. It is more interesting to consider how far the quality and position of the effusion may influence this result, inasmuch as knowledge on these points may lead to an anticipation of the event, and possibly to its prevention, and so diminish the number of surprises with which pleurisy has been so aptly accredited.

There is a difference of opinion as to whether pleurisy of the left or right side is the more dangerous. It is very commonly thought the left side, and Murchison^c speaks of the main object of tapping in such a case being the restoration of the position of the heart, and of there being far greater danger of the patient

^a De la Paracentèse de la Poitrine. Paris, 1851.

^b Deutsches Archiv für klin. Medicin. Band IV.

^c New Syd. Soc. Year Book, 1869–70. P. 137.

dying from sudden syncope than from asphyxia. Hasse^a also says that pleurisy of the left side is more apt to prove fatal in the acute stage. Leichtenstern shows that the opinion that cases of sudden death and severe syncope are more frequent in left than in right exudations, is opposed to statistics. Of 52 cases of such accidents, 31 were on the right side, 21 on the left.^b Other high authorities maintain an exactly opposite opinion—viz., that fatal syncope is more usual in left-sided effusions—as Fraentzel (the author of the article “Diseases of the Pleura,” in Ziemssen’s Cyclopædia, Vol. IV.), who says that hitherto he has never observed a case of death from syncope in effusion on the right side. The inference is plain, that while authors disagree as to the relative frequency of the event in right and left-sided effusions, sudden death is liable to occur in either case. Trousseau^c accounts for these cases of fatal syncope by the great displacement of the heart occasioned by the effusion. The heart, he remarks, is forced out of its natural place; the aorta and large vessels are twisted in such a way as to impede greatly the current of the blood, so that under the influence of an exciting cause, such as the more or less abrupt movement of the body, the circulation is brought to a complete stand-still. A French writer of the name of M. Peyrot^d specially describes the displacement of the heart, which he has been able to determine in left-sided effusion, as a movement of rotation upon its long axis, in which the right ventricle, from its former anterior position, tends to become quite internal, and even a little posterior. Bartels believes that it is the great *venous* trunks that are concerned in these suddenly fatal cases, their permeability being endangered by the pressure of the effusion. The ascending vena cava particularly, where it perforates the central tendon of the diaphragm to reach the pericardium, and where it is firmly attached to the margins of the quadrilateral foramen, may, through the displacement of the heart, suffer an almost rectangular twist. Bartels has repeatedly observed this condition of the ascending vena cava in *post mortems* of cases of left-sided effusion, and Fraentzel has also seen it in three autopsies, which were cases of left-sided pleuritis. Bartels’ explanation of the occurrence is that such a twist in the inferior vena cava

^a Pathol. Anat. P. 204.

^b Lond. Med. Rec., 15th Dec., 1880. P. 489.

^c Clin. Med. Vol. III., p. 221. Syd. Soc.

^d Étude sur le Thorax des Pleurétiques. Thèse de Paris, 1876, p. 29.

must necessarily present a great impediment to the return of venous blood from the lower half of the body to the heart, and thus lead to an imperfect filling of the heart with blood. This deficiency in the natural blood-supply of the heart will be all the more dangerous because, on the one hand, a rapid diminution of the whole mass of blood is a necessary consequence of a quickly increasing pleuritic effusion; and, on the other hand, the pressure which the effusion exercises on the affected lung, as well as the loss of the vital movements of the lung itself, restricts and interferes with the conveyance of blood from the right to the left side of the heart. If, in addition to these conditions, so unfavourable to the proper filling of the arteries of the body, there is super-added an accidental and even quite transitory disturbance of the circulation—as, for instance, a hasty movement of the body, a violent fit of coughing, by which the diaphragm may suddenly be driven upwards, and the twisted inferior vena cava, above the diaphragm, be quite compressed—such a disturbance would certainly suffice to bring about an absolute insufficiency of the arterial blood-pressure, which becomes manifest either by the occurrence of serious syncopal attacks, or is followed by immediate death.

The tendency to syncope in fatal cases of pleurisy does not seem to be directly due to the *amount* of the pleural effusion; it has occurred when the physical signs did not indicate the existence of an inordinate quantity of fluid, and when the collection found after death was not very large; nor do the displacement of the heart and consequent twist of the vena cava seem a sufficient explanation for many of the cases. It is not always the cases in which there is most displacement that exhibit the tendency to sudden death, while it has been observed in cases where the cardiac dislocation was by no means great. It has occurred in *right-sided* effusions—though Fraentzel has not met such a case—when the implication of the heart by direct pressure may be held to be less severe than in left-sided effusion.

When fatal syncope is found in connexion with a heart perfectly sound in structure, and only slightly displaced by an effusion far from excessive, it has been suggested by Dr. Gairdner^a that death in such circumstances may be considered to be due to more general causes, such as the severity of the diet, or to the treatment by depletion and digitalis, rather than to the disease.

It may be said that such cases as have been alluded to above,

^a Diseases of the Lungs. P. 290.

where persons died suddenly with fluid in a pleural cavity, should have been tapped, and no doubt there is a rapid growth of healthy opinion that no time should be lost in mechanical removal of fluid from the pleura, owing to a fallacious confidence in the efficacy of absorbents; but still the liability to sudden death appears to haunt pleural effusions, even when mechanically relieved, and that by skilful and practised hands.

Again, I need not quote cases, but will merely refer to a typical instance, published by Dr. Broadbent,^a of sudden death three and a half hours after paracentesis. The patient said he was relieved, and seemed and felt better. Shortly afterwards he was observed to be very quiet, and when looked at more carefully was found to be dead. Dr. Broadbent^b observes that such cases, in which tapping the chest has been followed by a suddenly fatal issue, have been made the occasion of remarks against the operation. The sudden death has been attributed entirely to the removal of the fluid, while it has been forgotten or denied that this was liable to occur as a result of its presence in the pleural cavity. When sudden death in pleurisy occurs soon after tapping the cause may generally be sought for either in the migration of emboli or in the accession of the form of pneumonia called by Traube serosa.

The compression of a lung by pleuritic effusion offers conditions favourable to the coagulation of blood in the branches of the pulmonary veins. It can be easily understood that a lung not completely compressed may have some of its veins full of stagnant blood, because the pressure from the pulmonary arteries no longer effects its propulsion into the left auricle.^c These thrombi would be likely to become detached as soon as the circulation through the lung was restored. An auricular thrombus can readily be formed under the same circumstances in a more or less compressed heart. The condition of the blood in acute pleurisy favours this event, since, so hyperinotic is it, that in former days the buffy layer in venesection was wont to be called "*crusta pleuritica*." The occurrence of aphasia, hemiplegia, gangrene of the lower extremities, renal, and splenic infarctions, in connexion with pleural effusion, owe their occurrence to the metastasis of thrombi formed in the pulmonary veins or auricular appendix, in consequence of the arrest of the circulation from pressure of fluid in the pleura.

^a Clin. Soc. Trans. Vol. X., p. 24.

^b Clin. Soc. Trans. Vol. XI., p. 140.

^c B. Foster. Clin. Med. P. 342.

Independent of embolism an acute œdematous infiltration sometimes attacks the lung of the affected side after the effusion has been removed by puncture, perhaps more frequently if very large quantities have been either too suddenly or too rapidly discharged. In such cases the blood-vessels, whose walls have long been more or less compressed and probably damaged in their nutrition, have to bear a sudden increase of pressure, which is sufficient to cause a rapid outflow of blood-serum into the pulmonary tissue, and thus occasion œdema of the lung. From the prevailing serous character of the exudation Traube has adopted for this process the name *pneumonia serosa*, and it is a process which may easily and rapidly prove fatal by flooding the bronchia with fluid, while expiratory efforts are inadequate to free the air-passages by fits of coughing.

I said that this short communication might have some points of surgical as well as medical and pathological interest, and to justify the forecast I must allude to sudden death as occurring in washing out the pleural cavity. Interference with the pleuritic thorax in any way is never exempt from the chance of surprises. The risk of embolism from thrombi lurking in the pulmonary veins is in such cases as likely as in serous effusion.

Dr. Cayley,^a in his remarks on a case of empyema, in which washing out the pleural cavity (for the seventeenth time) was followed by convulsions and death, lays stress on the point that in all the cases cited in his communication the seizure took place during the injection and not during the withdrawal of the fluid. He also observes that the nature of the fluid employed does not seem to have any special influence in inducing the convulsions. In his case a weak solution of iodine was being used; in another a solution of carbolic acid; in a third warm water, to which a little alcohol had been added; and in a fourth warm water only. It should, moreover, he observes, be remembered that the danger seems to be greater after many repetitions of the operation than in the earlier stages of the treatment. Some consider these convulsions to be reflex, and due to irritation propagated from the pleura to the medulla oblongata, inasmuch as the symptoms closely resemble those of reflex epilepsy. Leichtenstern^b says that in cases in which severe syncope and sudden death are observed during the irrigation of the pleural cavity, the cause is either direct mechanical concussion of the easily exhausted heart by the stream of fluid thrown in, or shock.

^a Clin. Soc. Trans. Vol. X., p. 16.

^b Op. cit. sup.

ART. VII.—*Note on Diabetic Urine with Low Specific Gravity.*

By CHARLES A. CAMERON, Professor of Chemistry, Royal College of Surgeons in Ireland.

DURING the last twenty-five years I have examined many hundreds of specimens of the urine of persons affected with diabetes, and I have occasionally met with specimens having exceedingly low specific gravity. More than twenty years ago I was in the habit of periodically examining the urine of a man, about forty years old, who was under treatment for diabetes by Dr. (now Sir George B.) Owens. The specific gravity of this patient's urine usually fluctuated between 1025 and 1035, but on one occasion the gravity fell to 1005. On making inquiries, the patient assured me that the urine had not been accidentally mixed with water. The day on which the urine was voided was extremely warm, and the patient informed me that he had felt unusually thirsty, and had, to use his own expression, spent the day drinking cold water.

About twelve years ago I examined a specimen of urine for the late Dr. Ringland; I found its specific gravity to be 1008, notwithstanding which it contained 1·2 per cent. of sugar. The patient was an elderly man. On several subsequent occasions I found this patient's urine to have a specific gravity under 1015, though usually the specific gravity was from 1028 to 1035.

Two years ago I found the specific gravity of a specimen of diabetic urine to be 1007. I was not able to ascertain in this case whether or not the urine had been mixed with water, but the person for whom the analysis was made assured me that the urine had been voided into a perfectly empty vessel.

About two months ago Mr. William Stokes, Professor of Surgery in the Royal College of Surgeons, gave me a specimen of diabetic urine which had a gravity of only 1005. There was a mere trace of urea present, and the solid matters in the urine consisted nearly altogether of sugar and chloride of sodium. Mr. Stokes stated that there was not the least doubt as to the urine being unmixed with water.

In examining urine it is always necessary to look for sugar, no matter whether the specific gravity of the fluid may be normal or otherwise. I occasionally find urine with a very high specific gravity, and with a—so to speak—diabetic appearance, to be quite free from sugar. On several occasions, in specimens of urine believed to contain sugar, I could not detect a trace of that sub-

stance. A few months ago I examined the urine of a man who had been treated for diabetes. The urine had a specific gravity of 1035, and, on being boiled with Fehling's solution, it gave a copious precipitate of cuprous oxide. There was something in the appearance of the precipitate, and in the slow way in which it made its appearance, that led me to suspect it was not produced by sugar. This proved to be the case, for, on treating the urine with yeast, no carbonic acid (save a mere trace) was evolved.

The presence of large quantities of urates in urine causes a brown precipitate with Fehling's solution. The urates, even when abundant, do not always separate as the characteristic "brick-dust." I have found very large quantities of urate of ammonium in urine which remained clear on standing, but which gave a brown precipitate on being boiled with Fehling's solution.

When testing for sugar in urine it is necessary to ascertain whether or not urates are present in large quantities. If they are they can be precipitated by the addition of hydrochloric acid; and the urine filtered or decanted from the precipitate can then be satisfactorily tested for sugar with Fehling's solution.

ART. VIII.—*The Theory of a Central Lesion in Exophthalmic Goître.* By WM. A. FITZGERALD, A.B., M.D., Univ. Dubl.

[Concluded from page 209.]

THE central theory of exophthalmic goître has been considerably strengthened by the experimental investigations of Filehne (*l. c.*). Dissatisfied with the contradictions implied by an explanation which referred some of the symptoms to paralysis and others to irritation of the sympathetic, and, moreover, disbelieving in the possibility of such a permanent and continuous condition of nervous irritation, he endeavoured to explain the matter by assuming a lessening or abolition of tone in the vagus centre, associated with a condition of vaso-motor paralysis. That the cardiac symptoms are not due merely to diminution of arterial tension he inferred from the fact that, although sudden lowering of tension causes great quickening of the heart's action, yet one often sees a chronic condition of low tension without a quick pulse, the vagus centre thus seeming to accommodate itself to gradual alterations of pressure.

He thus thought of the vaso-motor centre and of the centre for the vagus, and this at once led him to the medulla oblongata, inasmuch as the course of the cardiac fibres of the vagus inside the central

nervous system is short and confined to the medulla. The following is Filehne's description of the experiments which he was led by this train of reasoning to perform:—"If, in not quite fully grown rabbits, after putting away the muscles at the back of the neck between the occiput and atlas, one removes the membrana obturatoria and the dura mater from the entire opening bounded by these bones, one sees, towards the head, the lower and posterior part of the vermiform process; to the right and left the corpora restiformia, ascending obliquely from below and behind, outwards and towards the brain, and enclosing between them the calamus scriptorius. Supposing *the portion of the restiform bodies exposed by this preparation* to be divided into four equal parts, it is in the upper fourth (that next the head) that one must operate." . . .

"I cannot as yet say with anatomical precision how deep it is necessary to make the wound, but it would seem that the incision must extend into the grey substance of the corpora restiformia." He usually made on both sides a transverse incision with a fine cataract knife, but on a few occasions he used the galvano-cautery. He was careful not to carry his incision as far as the under-surface of the medulla, and thus wound the roots of the vagus. Of the results obtained the most frequent was implication of the vagus, "so that neither reflex irritation (by tobacco smoke) from the nasal mucous membrane, nor suffocation produces the cessation of cardiac action, or even slowing of the pulse which is so characteristic in rabbits, and so that subsequent division of both vagi in the neck does not cause any acceleration of it."^a Next in frequency was

^a Kratschmer (Abstract in Jour. of Anat. and Phys., Vol. V., part 2, 1871) found that in rabbits irritation of the nasal mucous membrane by ammonia, or even tobacco smoke, or by mechanical or electrical stimulation, caused marked slowing, and even cessation of the heart's action. Division of both fifth nerves within the cranium, or of both vagi, prevented this occurring. He, as well as Brown-Séquard (referred to by Rutherford), attributed this to inhibition exerted by the vagus, and excited by a reflex influence from the nasal mucous membrane. Rutherford (Journal of Anat. and Phys., 1873, p. 283) confirmed these results, but explained them by the fact that the rabbit holds its breath when ammonia is held to its nose, and he considers that what stimulates the cardio-inhibitory centre is the presence of carbonic acid gas in, or the absence of oxygen from, the blood. He also found that division of the vagi prevented the slowing of the pulse. Lauder Brunton finds that the same effects are produced by nitrite of amyl (Journ. of Anat. and Phys., Vol. V., p. 92), so that in investigating the action of that drug he had to keep up artificial respiration to eliminate this source of error. He says:—"One of the chief of these (errors) is that any strongly-smelling vapour, and nitrite of amyl among others, acting on the nose of rabbits, causes suspension of the respiration for a short time, and the alteration in the condition of the blood thus produced causes irritation of the vagus, and slowing of the heart's action." Thus all parties are agreed in ascribing the result to inhibition exerted by the vagus.

exophthalmos, usually more pronounced on one side than on the other. It occurred even if the sympathetic had been previously divided in the neck, thus excluding the possibility of its being due to spasm of the musculus orbitalis. Although swelling of the thyroid was but seldom produced, there was well marked vaso-motor paralysis of the ears, of the thyroid, and of the anterior part of the neck.

Stellwag's signs were also occasionally noticed, while the pupils were in no case affected. In only one case, and in that he had operated with the galvano-cautery, did he succeed in producing all three cardinal symptoms in the same animal.

Filehne formulates the following conclusions:—

“1. Basedow's disease may be produced by paralysis of certain nerve regions which are controlled by the medulla oblongata. The points traversed in common by the nerve-paths concerned are the restiform bodies.

“2. Under such circumstances the exophthalmos and the goître depend on dilatation of the blood vessels.

“3. The increased rapidity of the heart's action is brought about by diminution or abolition of tone in the vagus.

“4. That Basedow's disease in human beings depends on the same physiological relations is highly probable, but must first be established by proofs afforded by pathological anatomy. In this investigation attention should be directed not only to the medulla oblongata but also to the condition of the trunk of the cardiac portion of the vagus.”

And finally he takes care to point out that, even if *post-mortem* examinations should give negative results, this would not be necessarily fatal to his theory, as the occurrence of functional affections of the central nervous system (*i.e.*, those in which it is *as yet* impossible to find an organic lesion) is admitted.^a

Filehne, however, was not the first physiologist who produced exophthalmos by wounding the restiform bodies, Brown-Séquard

^a A case of injury to the restiform body in the human subject has been recorded by Waters. The patient survived for 24 hours, and among other symptoms (paralysis of facial, glosso-pharyngeal nerves, &c.) “the right side of the face and the right arm and leg were of higher temperature than the corresponding parts of the opposite side.” It was found *post mortem* that the right restiform body, and the right posterior column of the cord had been divided transversely (*Med. Times and Gaz.*, 1863, Vol. I., p. 517). In a case of Graves' disease, in which exophthalmos was present on the right side only, there was also right-sided flushing of the face, and distinct elevation of temperature on that side, the pupil being unaffected. Samelsohn's case, referred to by Sattler, p. 964.

having done so several years before. I regret that I have been unable to find the description of his method of procedure, but the following extract from a lecture by him is sufficiently conclusive:—“Exophthalmia in animals born of parents in which an injury to the restiform body had produced that protrusion of the eyeball. This interesting fact I have noticed a good many times, and I have seen the transmission of the morbid state of the eye continue through four generations. In these animals, modified by heredity, the two eyes generally protruded, although in the parents usually only one showed exophthalmos, the lesion having been made in most cases only on one of the corpora restiformia.”^a Brown-Séquard had previously produced othæmatoma or sanguineous tumour of the ear (also in guinea-pigs) by wounding the restiform body near the nib of the calamus scriptorius.^b

As Graves’ disease is of tolerably frequent occurrence among lunatics, to which class of persons this affection of the ear is almost entirely confined, it seems not unlikely that the two affections should be observed in the same individual. Such a combination has been recorded by Robertson^c in a patient suffering from acute mania and Graves’ disease. Both ears were affected. Lennox Brown^d has expressed a doubt as to whether Robertson’s case was really one of othæmatoma, but I hope I shall be excused if on such a point I prefer to rely on the opinion of a physician who has made insanity his study, and who was himself in charge of the case in question, rather than on that of a throat and ear specialist, however eminent, who had never had an opportunity of seeing the patient.

A possibly somewhat similar instance has been recorded by Stiff,^e who thus describes the case, that of a male patient aged thirty-four:—“General health bad; exhaustion; conduct violent; notions incoherent; countenance painfully distorted; the left eye wild and prominent; the right eyelid paralysed, with dilatation of the pupil. Not epileptic.” Othæmatoma occurred on one side;

^a On the Hereditary Transmission of Effects of certain Injuries to the Nervous System. *Lancet*. 1875. Vol. I., p. 7. In this connexion it may be noticed that heredity seems, in some instances, to have a share in the causation of Graves’ disease. Thus Sattler (p. 977) enumerates eight writers who have recorded such cases, and Withusen (translation by Dr. W. D. Moore in *Dublin Med. Press*, Vol. 42) believes that in two of his patients an hereditary disposition to the disease existed.

^b *Lancet*. 1869. Vol. I., p. 515.

^c *Glasgow Med Journal*. July, 1875.

^d *West Riding Asylum Reports*. Vol. V., p. 154.

^e *Brit. and For. Med. Chir. Rev.* Vol. XXI., p. 222. 1858.

it is not stated which. I am inclined to think that if attention were directed to this possible connexion, cases of the kind would perhaps be more frequently observed.^a

The occasional occurrence of what are undoubtedly central lesions in patients suffering from Graves' disease cannot fail to strengthen the central theory.

Symmetrical paralysis of the external recti, of which three cases are on record, is in all probability a central lesion, but there can be no question whatever about the central nature of paralysis of the associated movements of the eyes. Stellwag (*l. c.*) has seen a case of paralysis of the associated lateral movements, while of implication of the associated upward movements three instances have been published,^b and within the last few months Warner has read a paper^c before the Medical and Chirurgical Society in which he described a case of Graves' disease complicated by ophthalmoplegia externa, as well as bilateral paresis of seventh and fifth nerves and tremor of the legs. Féréol^d has observed the following symptoms (certainly pointing to a coarse brain lesion) come on six months after the onset of Basedow's disease in a man forty-one years of age:—Pain in head, vomiting, giddiness, tremors, reeling gait, with a tendency to fall to the right; subsequently diplopia, due to paresis of right fourth nerve, and in addition on the right side diminished motor power, with hyperalgesia, and on the left analgesia.

The occurrence of glycosuria, of which several cases are on record,^e seems to point in the same direction, although Lauder Brunton (*l. c.*) suggests that this phenomenon helps to localise the lesion in the third cervical ganglion. On this point I shall merely quote the following passage from Michael Foster^f descriptive of what is known as the "diabetic puncture:"—"If the medulla oblongata of a well-fed rabbit be punctured in the region which we have previously described (p. 134) as that of the vasomotor centre (the

^a I have to express my obligations to my friends, Dr. Ringrose Atkins, Medical Superintendent of the Waterford Asylum, and Dr. E. G. Levinge, of Lucan, for kindly affording me valuable information on this part of the subject.

^b Fischer. *Arch. Génér. de Méd.* Vol. II., pp. 521, 652. 1859. Chvostek. *Wiener med. Presse.* 1872. (11 Beobacht.). Roth. *Ibid.* 1875. No. 30, s. 680.

^c *Lancet.* 28th October, 1882.

^d *L'Union Méd.* No. 153, 1874, and *Gaz. des Hôp.* No. 137, 1874.

^e Five referred to by Sattler (p. 970), and one by Habershon (*Brit. Med. Journ.*, 1876, Vol. I., p. 497), and another by Fischer in *Aertztliches Intelligenzblatt*, 1880, No. 27.

^f *Textbook of Physiology.* P. 293.

area marked out by Eckhard as the diabetic area, agreeing very closely with that defined by Owsjannikow as the vasomotor area), the urine of the animal, which need not necessarily be in any other way obviously affected by the operation, will be found in a few hours to contain a considerable quantity of sugar, and to be increased in amount." It will be remembered that it is in a portion of this same area that the localisation of the lesion of Graves' disease has been suggested.^a

The fact that a few *post mortems* have shown alterations of the cervical sympathetic will, no doubt, be quoted in support of the opposite theory; but, in reply, it may be urged that, in a still larger number of cases, careful microscopical examination by the most competent pathologists has failed to detect the slightest abnormality in the sympathetic cord or its ganglia. Further (as Sattler points out), the alterations that have been found are of an exceedingly inconstant nature, and are sometimes more marked on one side than on the other, or even confined altogether to one side, although the disease may have been almost symmetrical. Then, the cases in question have usually been old and severe cases of the disease, and have sometimes shown other degenerative changes, such as fibroid and cystic degeneration of the thyroid, and thickening of the bones of the skull,^b while, on the other hand, instances of central lesions have not been wanting in several cases, amongst others in that by Geigel already referred to, and notably in a case recorded by Morell Mackenzie.^c Lockhart Clark, who examined the brain in this case, says:—"The substance of the cerebral tissues was not unnaturally soft; nor was there any clot or embolism anywhere, but the corpora quadrigemina, and the medulla oblongata—particularly in its posterior part—were very soft, and on minute examination displayed the usual appearance of common softening." And, more recently, Cheadle^d has published a case in which, although the brain and spinal cord seemed perfectly normal to the naked eye, microscopical examination showed very great dilatation of the vessels of the medulla oblongata and

^a Luys (L'Encephale, May, 1882) reports four cases of diabetes in which he has found alterations in the floor of the fourth ventricle near the diabetic puncture (Brit. Med. Journ., Dec. 30, 1882, p. 1311).

^b It seems probable that the alterations which have been noticed in the sympathetic cord and its ganglia may be analogous to the descending tracts of degeneration in the spinal cord, and may thus be due to an extension from a focal lesion.

^c Trans. Clin. Soc. Vol. I., p. 9.

^d St. George's Hosp. Reps. Vol. IX., p. 797. 1879.

cervical region of the cord. The cervical sympathetic showed no abnormality whatever, even to the most careful microscopical examination. This affection of the vessels Cheadle considers as probably a result of the disease, and he says that the condition of the nervous system is probably "more one of disorder than of organic morbid change;" but still the results of this *post mortem* seem apparently to have induced him to suggest the localisation of the lesion in the vasomotor and cardio-inhibitory centres; at any rate he had before expressed himself much more guardedly on the subject. This opinion, arrived at by such a competent pathologist, independently of, and I believe prior to, the publication of Filehne's and Sattler's articles, must certainly be regarded as a most valuable one.

There is one thing which can hardly fail to strike anyone who has carefully studied the recorded cases of this disease—namely, the marked preference shown by the symptoms for the right side of the body. Although bilateral symmetry is not infrequent, it is certainly not the general rule, especially at the commencement of the affection; and whenever any want of symmetry is present, there is almost always a preponderance of symptoms on the right side. Thus, speaking of the goître, Trousseau says:^a—"Both lobes may be equally increased in size, but more often, according to Graves, Stokes, other authors, and my own personal experience, the hypertrophy especially affects the right lobe." Sir T. Watson^b says the same; and Wecker^c says:—"The exophthalmos generally attacks both eyes, commencing in the right." In every case which I have found recorded, in which but one lobe of the thyroid was affected, it was the right one which was enlarged;^d and of the cases in which the exophthalmos was unilateral, either through the entire course of the disease, or at all events for a very considerable period, in fifteen it was the right eye, and in five the left, which was affected, while in two cases I have been unable to ascertain

^a L. c. P. 554.

^b Practice of Physic. Vol. I., p. 841. I am aware that the right lobe is said to be normally very slightly larger than the left. In Quain's Anatomy it is said to be "a few lines longer and wider," but this seems quite insufficient to account for the marked difference so often observed in Graves' disease. That the right lobe is more often affected than the left in cases of endemic goître, at least in certain districts, has been shown by G. H. Savage. Lancet. 1872. Vol. II.

^c Ocular Therapeutics. Eng. Trans. P. 506. Schnitzler (Wiener med. Halle, 1864, Nos. 24 and 27) says that the exophthalmos is usually more marked on the right side.

^d Six referred to by Sattler (p. 952), and, in addition, one by Patchett, in which there was also ulceration of the right cornea. Lancet. 1872. Vol. I., p. 827.

which eye was involved. Sichel's two cases of unilateral proptosis I have omitted, as it appears exceedingly doubtful that they had any connexion with Graves' disease.^a In short, I believe there is a very general consensus of opinion that the symptoms are, generally speaking, much more marked on the right side. I am not aware that any explanation of this fact has ever been suggested,^b but it has occurred to me that the extreme constancy with which the cardiac symptoms are present may afford a clue to the problem. It is exceedingly uncommon to find them absent; and Trousseau, and most writers, except von Graefe, believe that they precede the other symptoms. On this point Sattler says (p. 972):—"It belongs to the rarest exceptions for the cardiac palpitation not to form the first symptom." Now, if it could be shown that the cardiac affection, so rarely absent, and so generally present at the very first, was itself a right-sided symptom, it would go far towards explaining the matter. And, in fact, this would seem to be the case, for it appears more than probable that it is the right vagus which is chiefly concerned in the inhibition of the heart, and that the left exerts but little power in that way. Arloing and Tripier^c found that in horses the heart was much more affected when galvanism was applied to the right vagus than to the left; and they then made a careful series of dissections (also in horses), and found "that the left pneumogastric only enters into the composition of the cardiac nerves by means of one very slender filament, which it furnishes in front of the first rib, while the right vagus gives off to the cardiac nerves a much greater number of fibres." And among their conclusions they state:—"There exists a notable difference between the two vagi, principally from a functional point of view; the right acts more energetically upon the heart than the left." Masoin,^d working independently of Arloing and Tripier, and without their knowing of his investigations, had previously arrived at the same conclusions. His experiments were

^a Bull. gén de Thérap. 1846. P. 346.

^b Unless the theory suggested by Praël, Heusinger, and Bühring, and referred to by Panas (Archives d'Ophthalmologie, Vol. I., p. 103) be considered an explanation—namely, that the heart acts with greater force on the blood-column on the right side than on the left. The value of this suggestion may be inferred from the fact that it had previously been made use of by Sichel (*l. c.*) to account for the presence of *left* exophthalmos in a case which he had seen. He thought there was greater pressure on the left side.

^c Archives de Physiologie. Tome V., p. 166. 1873.

^d Bull. de l'Acad. Roy. de Méd. de Belgique. Tome VI. 3^{me} Série, p. 4. (Abstract in Arch. de Phys. Tome IV., p. 519. 1872.)

made on seven rabbits, a dog, and a pigeon, and he concludes thus:—"The two vagi, or rather the accessory nerves of Willis, do not behave in an identical manner as regards the heart. In slowing or suspending the action of that organ the right possesses a power much superior to that of the left." Meyer^a also has observed that the left vagus of a tortoise (*Emys lutaria*), obtained from certain districts in Germany, had no inhibitory action on the heart whatever, while the right vagus had a powerful one. In specimens of the species obtained from Italy the left vagus had a slight inhibitory action. That a similar arrangement exists in human beings seems highly probable, and it is significant that at least three cases are on record in which irritation of the *right* pneumogastric in man caused marked cardiac inhibition. One is the well-known instance of Professor Czermak, who could inhibit his heart by pressing on a small indurated lymphatic gland situated over his *right* vagus,^b another a case in which syringing out an abscess-cavity at the *right* side of the neck caused marked slowing of the pulse,^c and the third is Gerhardt's case.^d

Physiologists have not, at least to my knowledge, explained why the cardiac nerves should be supplied by the right vagus rather than by the left, but it appears to me that the mode of development of the heart affords the required explanation. The organ in question first makes its appearance as an elongated vertical sac or tube, lying on the ventral surface of the embryo, in front of the throat. It is at first symmetrically situated, but soon becomes bent on itself, like a horse-shoe, and *projects towards the right side*. That the pneumogastric nerves are developed at an early period is shown by the recurrent direction of the inferior laryngeal branches, which proves that they must have been formed before the descent of the heart from the neck into the thorax; and as at that early period the heart is situated to the right of the middle line, it is certainly not surprising that it should be chiefly supplied by the right vagus. It will be remembered that the stomach is at first placed vertically in the embryo, and that it subsequently turns over on its right side, so that the membranous fold which connects it with the vertebral column (the mesogastrium) is turned to the left, and that the result of this arrangement

^a Das Hemmungsnervensystem des Herzens. S. 61. 1869. (Abstract in Journ. of Anat. and Phys. Vol. VII., p. 180.)

^b Jenasche Zeitschrift. Band II. 1865. S. 384.

^c Malerba; Archives de Physiologie. 2^{eme} Série. Tome II., p. 765.

^d Eulenburg and Guttman. Trans. by Napier. P. 26.

is that the right pneumogastric supplies its posterior, and the left its anterior surface.

If there be anything in this suggestion, one should expect to find that in a considerable proportion of those very rare cases in which cardiac symptoms are absent, the other symptoms should preponderate on the left side, and investigation shows that it is so. Thus in Mooren's case (*l. c.*) there was *left* exophthalmos, no goître, and no cardiac symptoms, but Graefe's sign was present on both sides; and in C. E. Fitzgerald's third case (*l. c.*) exophthalmos and Graefe's sign were present on the *left* side, but there was neither goître nor palpitation. Reith^a has recorded a case in which *left* exophthalmos had been noticed for many years, but the right eye only protruded one day before the patient's death, which occurred with cerebral symptoms. *Post-mortem* examination showed slight enlargement of the thyroid (not noticed during life) and changes in the cervical sympathetic, especially on the left side. There was no history whatever of palpitation. And in Yeo's first case (*l. c.*) *left* exophthalmos had been present for about twenty-one months and palpitation for about three months before the case came under observation, and there was enlargement of the *right* lobe of the thyroid, which had not been noticed by the patient until her attention was drawn to it. It must at this time, therefore, have been slight, although it subsequently became most marked. It thus appears that *left* exophthalmos had existed about eighteen months before palpitation and right-sided goître came on together. In a case of Hutchinson's^b there was *left* exophthalmos, and five or six months later the right eye became prominent, but not so much so as the left, and there was no goître. "Patient (male, aged twenty-nine) says he has suffered from palpitation as long as he can remember, the slightest occurrence causing his heart to 'go all of a flutter.' This feeling has not increased lately." It seems probable that the cardiac symptoms here were independent of Graves' disease, which had come on subsequently. Becker^c has published the case of a lady, aged twenty-eight, whose friends had noticed, for about a year, occasional *left* exophthalmos. When seen by Becker it was but slight, and there was arterial pulsation in the left retina, but not in the right. On inquiry he found "that occasionally marked palpitation had been present, and that,

^a Med. Times and Gaz. 1865. Vol. II., p. 521.

^b Med. Times and Gaz. 1874. Vol. II., p. 212.

^c Zehender's Monatsblätter. Band XVIII., S. 2. 1880.

on account of slight swelling of the thyroid, preparations of iodine had been several times administered." He did not see the patient again, but he ascertained that under anti-hysterical treatment and galvanism to the neck recovery took place.

It seems exceedingly questionable whether in this case the palpitation was not due to the iodine which had been taken. Virchow^a calls attention to the fact that, together with the disappearance of a bronchocele in consequence of small doses of iodine, marked acceleration of the pulse and palpitation of the heart may be observed. This had also been pointed out by Rilliet,^b and Soelberg Wells^c has even suggested that, as the same thing has been noticed when a goître diminishes without the administration of iodine, it may be due to the admixture of soluble goître-material in the blood. Mauthner^d has published a case in which there were one-sided proptosis and Stellwag's sign, but neither goître nor cardiac symptoms. Unfortunately he has omitted to mention which eye was prominent, so that the case is useless for testing this theory.

I have found no other cases recorded of left exophthalmos, and the only other cases that I have met with in which cardiac symptoms were absent are three in number—they tell against the theory. The first is C. E. Fitzgerald's fourth case, in which there were *right* proptosis and Graefe's sign, without either goître or palpitation. The second is a case by Abadie,^e with *right* exophthalmos and Stellwag's sign, very slight goître, and no cardiac symptoms, and the third is Morell Mackenzie's fourth case (*l. c.*). Both lobes of the thyroid were enlarged and both eyes protruded, and there was no palpitation or quick pulse; but the patient was seen only once, and the case is very briefly reported.

Another case has been published by A. E. Sansom,^f entitled a "Case of Exophthalmos with none of the cardiac and thyroid phenomena of Graves' disease." Both eyes were prominent, and arterial tension was rather above the normal; but as no mention is made of the presence or absence of the eyelid phenomena of Graves' disease, it is impossible to form any opinion as to whether the case is one of that affection.

^a Pathologie des Tumeurs. Traduit par Aronssohn. Vol. III., p. 270.

^b Mémoire sur l'Iodisme constitutionnel. Paris. 1860. P. 83.

^c Diseases of the Eye. Third Edition. P. 713.

^d Wiener med. Presse. 1878. No. 7, s. 190.

^e L'Union Méd. 1880. No. 157.

^f Trans. Ophthalm. Soc. Vol. II., p. 241.

There is of course nothing very extraordinary (although it would seem to be unusual) in the lesion of the cardio-inhibitory centre, for example, being more marked on one side, and that of the vaso-motor centre preponderating on the other; and a particularly good example of this crossed arrangement of the symptoms is afforded by Yeo's case, before alluded to. There was at first *left* exophthalmos, subsequently palpitation and *right* goître came on, and, still later, *right* exophthalmos and *left* goître were added to the symptoms.

ART. IX.—*Infantile Diarrhœa.*^a By ALEXANDER HARKIN, M.D.; F.R.C.S.; ex-President, Ulster Medical Society; and Membre de la Société Française d'Hygiène.

THE subject of infant mortality, to which diarrhœa is a prime contributor, is not alone of scientific interest, but of national concern. Communities do not increase so much by a preponderance of births as by a diminished death-rate, and to compass this desirable result should be the end and aim of all our sanitary arrangements. Whenever on the evidence of reliable vital statistics we are assured that an exceptionally high rate of mortality prevails at any period of life, at a special season of the year, or in any particular locality, we may reasonably conclude that the laws of health have been disregarded, and that the local controlling influences and surroundings are in an unsound condition.

So long indeed as we must admit with Dr. West that one-half of the children born in these kingdoms perish before attaining their fifth year, or with Sir James Simpson that every fourth or fifth grave is dug for a child under twelve months, we must also own that our social and sanitary customs are defective, and our boasted progress in science and civilisation is without foundation in fact. We have a striking corroboration of these statements, and an indisputable proof of the awful waste of infant life in this country, in the returns of the Registrar-General for England, who tells us that of four millions of deaths registered in England and Wales in one decade (1851 to 1860), nearly two millions were of children under five years of age. The greatest number of deaths occurs in the first year of the quinquennial period, and is chiefly attributable to the influence of diarrhœa—for fatal diarrhœa is essentially a disease of infancy; that it should be so affords

^a Read before the Ulster Medical Society, March, 1883.

matter for most serious consideration. We are the more impelled to the study of this problem by the knowledge that although during the course of the present century great progress has been effected in the reduction of infant mortality from all causes under the first five years—viz., from 70 to 27 or 28 in the 100, and also that during the summers of the early part of this century official returns assure us there was a comparatively small mortality from infantile diarrhœa, yet in recent years the deaths from this disorder have exhibited a marked increase. Moreover, the deaths from diarrhœa under one year, as compared with the deaths at all ages in England and Wales from the same cause, have steadily increased—*i.e.*, from 44 per cent. in 1847 to 64 per cent. in 1873 (*British Medical Journal*, Nov., 1875).

What causes this increase, with the concurrent decline in the death-rate of typhus and typhoid fevers, it is difficult to determine; it may possibly be accounted for by the fact that while in the last seventy or eighty years the filth accumulations of our large towns have been reduced by the abolition of cesspools, this result has been attained at the expense of the purity of our rivers, from which the water supply of large towns is generally derived. The drainage of smaller communities is poured into the stream nearer its source, and the residents lower down imbibe with the water supply the germs of zymotic disease—the undue proclivity of children to diarrhœa being possibly owing to their greater dependence upon the use of water for milk dilution, &c., the beverage of adults being generally of a more composite nature.

The prevalence and fatality of summer diarrhœa is generally attributed to the influence of high temperature, subject to some qualification, for Dr. Laycock has long since demonstrated that it is only in the absence of a rainfall sufficient to flood the sewers of a large city that the epidemic rises to its full development, and that its decline and subsidence is sure to follow on the occurrence of this event.

In large manufacturing towns, the great centres of industry, whose increase is so rapid that sanitary arrangements are unable to keep pace with them, infantile diarrhœa is always prevalent—in summer as an epidemic, at other seasons in an endemic or sporadic form. Besides the remote or predisposing cause referred to, the proximate causes of infantile diarrhœa are of a varied nature, chief of which is defective alimentation; the persistence of the colostrum in the mother's milk, foul air, insufficient clothing,

prolonged dentition, hepatic derangement, inattention to cleanliness, defective sewerage and impure water, the absence of maternal care while the mother is from home at work, and the nostrums administered to quiet the baby while away from it.

The prevalence of hand-feeding, which is not limited to the poor, but which is practised among the comfortable classes and the votaries of fashion, is also a pregnant source of infantile diarrhœa. Thus, when a mother, whether from caprice or necessity, withdraws the natural nourishment from her child, the substitute supplied is too often suggested by ignorance or prejudice. Among the poor the evils of over-feeding, among the rich from false theory, and sometimes from a less excusable motive, the evils of a diluted milk supply, prevail to the injury of the nursling. "It would seem incredible," says *The Lancet*, "but that daily experience teaches us the fact, that large numbers of persons occupying decent positions in society systematically starve their children in respect of that article of food which is of all the most essential to their nutrition. Even to very young and fast-growing children they give cocoa with water, and not always even a suspicion of milk, corn flour with water just clouded with milk, tea, oatmeal, baked flour, all sorts of materials indeed as vehicles of milk, but so lightly laden with it that the term is a sham. There are thousands of households in which the children are reared upon this miserably defective dietary—pale, slight, unwholesome-looking, as their parents say, 'always delicate'—households, too, in which wine to the value of four or five shillings is every day consumed in the diningroom. In some there is the excuse of ignorance; in many the stint is a simple meanness, a pitiful economy, which is supposed will not be open to the criticism of observant friends."

But while this discreditable statement is too true, I fear that our profession shares the blame, for many of the body are advocates of this principle of dilution, and this, like many other "vulgar errors," owes its origin in recent or remote times to the dicta of the family doctor. A fallacy very prevalent among nursing mothers is that when diarrhœa arises during protracted dentition, any attempt to arrest its progress would prove fatal to the infant, and for this reason, or rather prejudice, many little patients are allowed to get into collapse before medical aid is asked.

A number of varieties of diarrhœa have been described by various nosologists, dependent principally upon the nature of the

evacuations, and a plan of treatment recommended for each. As for those with fæculent, bilious, mucous or serous discharges, it is not my intention to follow them in their sub-divisions, but to refer to the general principles upon which, in my opinion, the treatment should be conducted. In its treatment the dictum of Sydenham, which states that “disease is nothing else than an effort of nature struggling by every means to exterminate the morbid matter, and so restore health,” is only applicable in the primary stage of the complaint, where it is often judicious to assist nature by a gentle laxative in getting rid of undigested food or other causes of irritation in the intestinal canal, the eliminant treatment cannot wisely be continued much further, nor would the expectant plan of treatment be permissible. The drain should be stopped at all hazards, and our efforts be directed to the speedy extinction of the disease, and the rapid restoration of the infant’s health.

But in the cure of this disease, perhaps more than in any other in the medical nomenclature, is its average mortality modified by the plan of treatment adopted; nor is there one in which, by following a mischievous routine and the traditions of the nursery, a mild attack may be so speedily converted into a hopeless one, or *vice versâ*, by scientific treatment, the sufferer be restored rapidly to health. Among the ideas generally received by mothers and nurses, and unfortunately fostered by the approval or tacit permission of many members of the profession, is the indispensable necessity of the free administration of milk to the child in diarrhœa. This conviction is so strong as to blind otherwise intelligent people to the immediate laxative results of each dose. They argue, when they reason at all, that whereas the use of milk in health tends to costiveness, therefore in disease it must have a similar tendency, and it is most difficult to prevail with them to make the change; and yet in those cases in which a cure was effected under my care it was almost only when complete ablac-tation was resorted to, in the case of both nursling and weanling; and where milk was promiscuously ordered by my medical brethren, with otherwise scientific treatment, I have known too many cases ending fatally.

In every case, then, I enjoin total abstinence from milk—the mother’s, or the milk of the cow, as the case may be, and order, as a substitute, arrowroot prepared with water, some sugar and port wine being added; and it is wonderful how much wine given in this way an infant of a few months will consume and require;

beef-tea, carefully prepared and freed from fat; and, when available, condensed milk, its use being unobjectionable from its being freed from casein, the irritating element in milk. An equally important requirement is absolute rest in the recumbent position, with sufficient warmth to the extremities and surface of the body, counter-irritation over the abdomen by poultices, a sinapism if required, and, failing other remedies, a small blister over the liver, as we have, in almost every instance, congestion of the hepatic system and functional derangement, and tenderness on pressure—this form of counter-irritation will be found most salutary and rapid in giving relief. As medicine I have long since dispensed with the old chalk mixture and astringent tinctures, having found them in practice too often acting as irritants to the sensitive mucous membrane of the bowels. My chief reliance is placed upon dilute sulphuric acid, either with or without the addition of laudanum in regulated doses. It is desirable to give it singly in most cases, as it may then be ordered after even loose motions with safety, whereas when combined with opium it can only be administered after express intervals. This remedy cannot be used, however, with the necessary freedom while the ordinary practice of milk-feeding prevails, as it is almost certain to induce colicky pains by the separation of the curd in an indigestible form, and thus increase the sufferings of the infant.

The indiscriminate administration of milk in diarrhœa produces a result almost analogous. Under ordinary circumstances, when a child imbibes a quantity of milk an immediate change takes place in the stomach—the separation and rapid absorption of the soluble particles, water, oil, and sugar, and the formation of the curd, which is again dissolved by the action of the gastric juice. But in this case the digestive powers of the stomach are much diminished, and portions of the curd pass unchanged into the intestinal canal, ordinarily producing irritation, griping, and purging, and becoming still more acrid when coming in contact with the acid intestinal secretions always present in diarrhœa. In the chronic mucous diarrhœa and in the diarrhœa of measles I have found great benefit from the administration of chlorate of potassium both by the mouth and by enema.

The treatment of choleraic diarrhœa, as it acknowledges a different pathology, is naturally distinct, being of the same class as cholera infantum, English cholera, and epidemic cholera, which, according to all reliable authorities, differ but in degree, while

similar in nature. They are diseases which affect the whole system, and our best guides in treatment are those who have been most successful in the country where it has its constant habitat.

Dr. Hall, who has seen a large amount of cholera in India, proposed to the Royal Medical and Chirurgical Society in London, on October 13, 1874, a plan of treatment which received the approval of the Society, as well as that of Sir Joseph Fayrer, an experienced Indian medical officer. He recommends dilute sulphuric acid, plenty of cold water in the early stage of cholera, and if they fail to arrest the disease, and the patient get into collapse, then the hypodermic injection of hydrate of chloral diluted with ten parts of water, ten grains at a dose. This, he states, has succeeded in the majority of cases. His statement is confirmed by a large number of Indian medical officers, and his theory is as follows:—

The symptoms of collapse he explains by the result of the experiments of Claude Bernard, who taught that they were due to great irritation and hypertrophy of the sympathetic nervous system. Kolman, too, has demonstrated that the right pneumogastric nerve supplies the whole of the small intestines. This is an inhibitory nerve; and Moreau and Lauder Brunton have shown that the division of all the nerves going to a portion of intestine is followed by the secretion of a fluid just like the rice-water stools of cholera. May not, he continues, the stimulation of the inhibitory vagus be followed by results much the same as if the sympathetic supplying the small intestines were paralysed? At any rate the result is thus given by Mr. Higginson:—Chloral hydrate, being a powerful sedative, soothes the irritated nerves, and so relaxes the contracted vessels; the blood is once more uniformly distributed, the pulse reappears at the wrist, the cramps and burning abdominal pains subside, sleep is induced, respiration becomes regular, discharges lessen, the face fills up, the voice becomes stronger, and the natural secretions are restored. While this plan commends itself to our adoption, I cannot recommend it from personal experience, but I may state that I have repeatedly tested the effect of remedies to the region of the vagus in the neck in cases of dangerous and profuse vomiting in gastritis and bilious attacks, with the most satisfactory results, in the absence of any medication of an ordinary nature.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Sanitary Legislation and Administration at Home and Abroad. By CHARLES A. CAMERON, M.D., S.Sc.C. Camb. Univ.; Fellow and Professor of Hygiene, R.C.S.I.; Medical Officer of Health, Dublin; Honorary Member of the Societies of Hygiene, Paris and Bordeaux. London: T. Danks. 1883. Pp. 11.

THIS is a reprint of the Presidential Address to the inaugural meeting of the Sub-section of State Medicine of the Academy of Medicine in Ireland, on February 9, 1883.

With his usual ability and much expenditure of time, Dr. Cameron collected a great deal of valuable information relative to sanitary legislation and organisation in foreign countries, and he embodied the results of his investigations in this address.

As no such information is to be culled from any work that we know of, we venture to think that Dr. Cameron's description of the administration of Public Health affairs in some of the most important foreign states will interest many of our readers.

"In France, the Société Royale de Médecine, established in 1776, was the only council of health in that country until the foundation, in 1802, of the *Conseil de Salubrité*, of Paris. Twenty years later a similar body was established at Lyons, and later on, at Marseilles, Lille, Nantes, Troyes, Rouen, and Bordeaux. In 1822 a *Conseil Supérieur de Santé* was attached to the Ministry of the Interior, but it exercised but little influence upon the subordinate councils.

"It is somewhat remarkable that in 1848 sanitary legislation first began to have an air of reality about it, both in France and England. The Supreme Council of Health was suppressed, and in its stead there was founded a *Comité Consultatif d'Hygiène*, attached to the Ministry of Agriculture and Commerce. At present this committee is composed of twenty members. Nine members are Government officials, and of the remaining eleven who are nominated by the Ministry, eight at least must be doctors of medicine. The Council supervises or offers advice in reference to the following, amongst other matters:—Quarantine, &c., distribution of vaccine, the inspection of drugs, food, poisonous colours,

and the means of controlling epidemics, the sanitary state of factories and dwellings, the care of the public baths and mineral waters. It receives annual reports from the provincial sanitary authorities, and it suggests certain questions for the consideration of the National Academy of Medicine.

“In the provinces there are *Conseils d'Hygiène et de Salubrité* for each department, and arrondissement. They consist of from nine to fifteen members appointed by the *prefet* for four years. They are presided over by the *sous-prefet*. They must meet at least once in three months. *Commissions d'Hygiène* exist in the chief places of the cantons; they resemble the councils, and are presided over by the *maire*. It is worth remarking that if a council consists, say of twelve members, five of them must be doctors of medicine, surgeons, or *officiers de santé* (a low grade of practitioners, and not health officers as we understand the term), three *pharmaciens*, or chemists, and one veterinarian.

“Paris and its environs are under the jurisdiction of a specially formed body, the *Conseil d'Hygiène Publique et de Salubrité au département de la Seine*. It consists of twenty-one members appointed for an indefinite period; each member receives a salary of £48 a year.

“At Havre, Nancy, and Rheims, *Bureaux d'Hygiène* have been established; in the two former in 1879, and in the latter in 1882.

“The actual administration of the sanitary laws in France is almost altogether in the hands of the Government. The staffs of the councils of health are in general very limited. The sums expended for public health purposes in the departments appear to be very small. In 1881 some of the departments did not spend £100 for these purposes. In the great department of the *Seine Inferieure*, the expenditure did not exceed £200. In Paris there is a more liberal expenditure. The sanitary laws are, to a great extent, administered by the Government, but certain important duties are carried out by the municipality. For example, although a laboratory for public health purposes and for toxicological analyses has been, since 1878, attached to the prefecture of police, the Municipal Council of Paris established a larger one in 1881. It is under the direction of Dr. Girarde, who is assisted by a staff composed of no less than fifty-one persons. Quantitative analyses are made for the public without any charge, and for qualitative analyses a fee of from five to twenty francs is charged.

“The *Bureaux* of Havre, Nancy, and Rheims closely resemble the sanitary authorities of British towns, except that they supervise the collection and publication of vital statistics.

“In the departments the sanitary staff under the *Prefet* consists of a director and two inspectors; they are assisted by a sufficient number of police.

“In Paris, in 1882, there was a chief sanitary inspector at a salary

of £240, six first class inspectors at £160 per annum, and six second class inspectors at a salary of £120 a year. The duty of inspectors is to examine houses to ascertain their fitness for habitation, and factories in which noxious trades are conducted, &c.

“There are in France numerous councils charged with the examination of animal food, and with the subject of the investigation of epizootic diseases. The service termed the *Comité Consultatif des Epizoötiques*, the *Vétérinaires Inspecteurs* (one for each department), and the *Vétérinaires Cantonaux*, was reorganised and rendered more effective in 1881.

“The weekly publication of vital statistics is only a recent institution. The hebdomadal returns issued in Paris are very complete documents.

“The number of French statutes and decrees in reference to sanitary affairs is very large, and, on the whole, well designed. They are not, however, properly administered in a large portion of the country, and the expenditure of money in effecting sanitary improvements, more especially in providing good water supplies to towns, and properly draining them, is too small.

“In the present German Empire there has existed since 1876 a superior Council of Public Health composed of five members—viz., a director, a statistician, a physician who has made sanitation a special duty, a chemist, and a veterinarian. There are besides ten extraordinary members, of whom two are government functionaries, four are physicians devoted to studies relating to sanitation, &c., two chemists, one pharmacien, and one architect. The Council supervises the distribution of vaccine lymph, the sale of drugs, the programmes for professional examinations of medical men and veterinarians. It suggests new laws for the improvement of the public health, and it conducts original scientific researches. Offences against the sanitary laws are punishable by fines and imprisonment. In Prussia there is a ministry for sciences and medical affairs. There is a sanitary police, but there is no properly organised department of public health. In each province there is a superior officer of the State who supervises affairs, medical, sanitary, pharmaceutical, and veterinary. He is advised by a provincial medical college composed of five or more members, including a pharmacien and a veterinarian. With the exception of the President, the sanitary police are wholly under the direction of the Provincial Governor, each of whom is advised by a medical councillor. In the smaller divisions of the country the sanitary police are directed by a landrath, who is advised by the district physician, or *Kreisphysikus*. The carrying out of the sanitary laws devolves upon the ordinary local police. An ordinance promulgated in 1835 enacts that every town containing more than 5,000 inhabitants shall be provided with a sanitary committee. In some towns this ordinance has not been carried into effect, and in the towns in which there are committees they appear to be even less active public health

authorities than the rural boards of guardians in Ireland. On the whole, with the exception of the inspection of food and drugs, and of factories, the public health administration of Prussia certainly admits of great expansion and improvement. The collection and publication of vital statistics are pretty fairly carried on. In Bavaria there is a public health department of the ministry of the interior. It is composed of a permanent staff of *medicinal Referenten* nominated by the King, and of delegates from the three universities and the local bodies, termed the Medical Chambers. The committee is consultative and has the right to initiate sanitary laws, but it has no administrative powers. In the provinces there are Medical Councils for the circles and cantons. Each district judge has the services of a physician or *Bezirksärzte* of the second class, who appears to be a kind of general medical expert and inspector. He deals with vaccination, the registration of deaths, inspection of hospitals, food, drugs, &c., and performs *post-mortem* examinations. An expert of this kind is generally to be found throughout Germany. In Austria and Switzerland a *Bezirksärzte* of the first class is appointed in each canton. There is inspection of industrial establishments, of places in which food and drugs are prepared and sold, and where poisonous pigments are manufactured. The chief work falls upon the police. There does not appear to be regular systematic inspection of tenement houses. The town authorities are not specially urged by a central power to improve the sanitary condition of the towns.

“In Austria sanitary affairs are almost wholly administered by the Government. The purely consultative bodies seem to exercise little influence in the origination of sanitary reforms, or the administration of sanitary laws. The police do nearly all the inspectorial work, and there are of course scientific experts to assist the authorities. Vital statistics have recently been commenced to be published weekly.

“In Belgium the local authorities have a large share in the administration of the sanitary laws. The *Bureau d'Hygiène* of Brussels, instituted in 1874 by the Medical Commission of the City, has a strong staff; it inspects the schools, and dwellings, and acts very similarly to a British local authority. It publishes vital statistics, supervises vaccination, and administers the laws affecting prostitutes. The superior officers consist of a director, five divisional medical officers, five assistants, and two medical inspectors of prostitutes. Throughout the provinces the central sanitary organisations are imitated more or less closely. Some of the sanitary laws of Belgium are excellent, but the greater number relate merely to unsound or adulterated food, and to drugs.

“In Holland the minister of the interior is the chief of the sanitary administration; he has no advising Council, but of course he has a *referent*. There is a large number of medical inspectors and assistants, who are wholly in the pay of the State; they do not practise. There

are provincial councils composed of from six to ten physicians, two to six pharmaciens, and the official inspectors. There are numerous sanitary laws, one of which in reference to the compulsory notification of infectious diseases contains very strict clauses.

“In Switzerland each canton has its own sanitary laws, and administers them on the whole at least as effectually as German States do. The most complete sets of laws appear to be those of Geneva, Zurich, and Bâle. Some general laws of the Confederation deal with the control of certain industrial employments, and with epidemics. In Switzerland there are public analysts.

“In Italy, Acts of Parliament passed in 1865 and 1870, and a Royal decree issued in 1873, enact an extensive sanitary code, based somewhat on the model furnished by France. The minister, the prefect of the province, and the maire, or ‘Sindaco’ of the district, are the principal directors, whilst the police are the ordinary agents. The medical practitioners are chiefly graduates of the universities; but quite recently a lower grade of practitioners has been created under the title of surgeons: they correspond to the English apothecary of the present century, and to the French *officier de santé*.

“In Scandinavia the greatest attention is given to public sanitation. The sanitary laws are very comprehensive. In the larger towns there are medical officers of health with functions analogous to those of our own health officers. In Denmark the care of the national health is at least as well attended to as in England. In Stockholm and Copenhagen there are sanitary associations, and a valuable journal of hygiene is published in the former city.

“With regard to Spain but little information is available. There are sanitary laws and a department for vital statistics; from the latter very elaborate and beautifully executed demographical charts and tables are issued.

“Of the sanitary laws of Russia we know nothing. Its towns appear to be on the whole very unhealthy, and St. Petersburg stands highest in its bills of mortality amongst the capitals of Europe.

“In the great Republic on the other side of the Atlantic much has been done towards the preservation of the national health. The most important health organisation is the ‘National Board of Health,’ in Washington. It collects vital statistics on sanitary information, institutes original investigations in reference to the ætiology of disease, and other points, and extensive inquiries and suggestions as to quarantine regulations. It has very little administrative power. Its expenditure from its foundation—April 1st, 1879, to June 30th, 1882—was £108,500. It issued, once at least a week, a very interesting Bulletin, which about six months ago was discontinued for want of funds. The Board’s estimate for expenditure for the year ending June, 1883, is £25,000.

In all the large towns of the Union there are municipal sanitary organisations closely resembling those of our own towns; but they are not subject to any central authority such as our Local Government Board. A large number of the States have Boards of Health which publish elaborate vital statistics. Some of the Boards (notably that of Massachusetts) publish interesting sanitary essays, some of which contain original matter. The collection of vital statistics is accurately conducted in only a minority of the States. It may be said generally of the United States that the sanitary administration is nearly altogether in the hands of the municipalities. There are some excellent codes of sanitary law in individual States, particularly in Massachusetts."

One thing is proved by Dr. Cameron's analysis of sanitary organisation in other countries—namely, that nowhere has more rapid progress in this direction been made of recent years than in the United Kingdom.

RECENT WORKS ON FUEL COMBUSTION.

1. *Report of the Smoke Abatement Committee*, 1882. London: Smith, Elder, & Co., Waterloo-place. 1883. Large 8vo. Pp. 193.
2. *Economy of Coal in House Fires.* By T. PRIDGIN TEALE, M.A., F.R.C.S. London: J. & A. Churchill. 1883. 8vo. Pp. 47.

IN a big volume we have a Report of the Smoke Abatement Committee and the Reports of the Juries of the Exhibition of Smoke Abating Furnaces, &c., held in 1882 at Manchester, and at South Kensington in 1881.

About 120 millions of tons of coal are annually consumed in the United Kingdom. A large proportion of this enormous quantity of fuel is burnt in the furnaces of manufactories, and largely for the purpose of generating steam. In the production of illuminating gas the consumption of bituminous coal is very large, and is daily increasing. The question, then, as to the best method of burning coals is one of great importance, one might say, to the whole community.

By far the greater proportion of the coal consumed is used as a means of obtaining heat. This heat is derived from the oxidation of the carbon and hydrogen of the coal. In order to obtain the maximal amount of heat which coal is capable of evolving, its

hydrogen and carbon must be wholly converted into water and carbon dioxide gas. One gramme of carbon converted into carbon dioxide, by combining in the proportion of one atom with two atoms of oxygen, evolves sufficient heat to raise the temperature of 8,000 grammes of water one degree centigrade.

If instead of converting carbon into carbon dioxide (CO_2) it is formed into carbon monoxide (CO), then the latter compound retains nearly all the heat which the carbon would have evolved if converted into carbon dioxide. For example, 1 gramme of carbon monoxide is capable, when oxidised into carbonic acid, of setting free sufficient heat to raise the temperature of 2,500 grammes of water one degree centigrade. Now, as carbon monoxide contains 12 parts of carbon combined with 16 parts of oxygen = 28 parts, it is evident that the carbon in this gas is capable of evolving nearly as much heat as when it is a constituent of coal. In other words, if, when burning fuel, the carbon is partly converted into carbon dioxide, partly into carbon monoxide, then the carbon in the latter form is uselessly expended; it goes off, carrying all its latent heat with it.

When fuel is so imperfectly consumed that much of its carbon is lost, as CO , it always happens that some of its hydrogen and more of its carbon are also uselessly set free in the form of carburetted hydrogen gas and black smoke. The nuisance created, in towns especially, by the evolution of large volumes of black smoke from the chimneys of factories, breweries, bakehouses, &c., is very great. To remedy it the Smoke Prevention Act was passed by Parliament a few years ago. For many years that Act was in utter disuse, but lately its provisions have to some extent been enforced in a few towns, especially in Manchester and Salford.

The amount of actual, or free carbon escaping through the chimney was formerly believed to be about 5 per cent. of the total quantity contained in the fuel, but the recent carefully conducted investigations of Graham and Scheurer-Kestner show that the loss does not exceed 1 per cent. Still it is a serious matter for a town in which 100,000 tons of coal are annually consumed to have at least 1,000 tons of carbon in the form of black smoke annually distributed throughout its atmosphere. The quantity of carbon escaping as carbon monoxide is often very large—probably, in some cases, one-third of the total carbon of the fuel escapes in this form. It appears, too, from the results of

Meunier's experiments, that no less than one-fifth of the hydrogen of fuel usually passes away unconsumed.

For the purpose of investigating into the best methods of abating the smoke nuisance, and for effecting economy in the use of fuel, a very influential committee was formed in London in 1880. In 1881 an exhibition of improved fire-grates, stoves, &c., intended to consume smokeless fuel, or to prevent the evolution of black smoke from bituminous coal, was held in the buildings erected for the great International Exhibition of 1862. Arrangements were also made for the purpose of testing the efficiency of the articles exhibited, and of determining the merits, absolute and comparative, of the various kinds of fuel exhibited. The exhibition seems to have been a successful one; it was visited by 116,000 persons.

In 1882 another Smoke Abatement and Economy of Fuel Exhibition was held at Manchester. It was visited by 31,563 persons.

One of the most interesting features in connexion with the labours of the Smoke Abatement Committee and their exhibitions was the valuable investigation made by Professor W. Chandler Roberts, F.R.S., on the gases withdrawn from the flues to which some of the grates and stoves shown were attached. The carbon in the products of combustion existed in three different conditions—namely, as carbon dioxide (CO_2), carbon monoxide (CO), and as carburetted hydrogen compounds (C_2H_4 , CH_4 , &c.). In order to make the results in the different cases comparable the carbon in the carbon dioxide was expressed always as 1,000, a fixed number, the carbon in the other gases being of course variable quantities. The differences between the amounts of carbon as carbon dioxide and carbon in other forms were remarkable, the smallest difference being 1,000 : 4, and the greatest 1,000 : 375. In some cases, therefore, for every 100 pounds weight of the carbon of the fuel which escaped in a fully oxidised state, and had given up their heat, $37\frac{1}{2}$ pounds of carbon escaped as carburetted hydrogen and carbon monoxide, giving out a mere fraction of their latent heat.

The loss of carbon was, on the average found to be 9 per cent. In the 17 most satisfactory testings the mean loss was 3.5 per cent. In these cases the fuel was consumed in open grates, which, however, were of superior construction.

The loss of carbon in the form of soot varied from 0.25 to 2.25 per cent. of the total carbon of the fuel.

In the close stoves the mean loss of carbon was 6·25 per cent.; in the best of them the loss was as low as 2·5 per cent.

The loss of carbon was found to be less during slow combustion than rapid combustion, in the ratio of 1·9 to 11·9.

Assuming the fuel to be perfectly consumed, 43 per cent. of the heat evolved from it is transmitted up the chimneys in the case of open grates, and only 24 per cent. in the case of close stoves.

It would appear that the open grates with direct upwards draught are the least effective for the prevention of black smoke. Amongst this class of grates the least effective as regards evolution of black smoke are those which have a solid floor upon which the fuel rests, instead of a grating through which air passes. The stoves from which the minimal evolution of black smoke took place were *close*, and had their supply of air regulated and forcibly mixed with the hot gases. Intermediate between these worst and best fuel-consuming appliances are the stoves in which the atmospheric air, though drawn upwards or downwards through the incandescent fuel, is not thoroughly mixed with the incandescent gases.

It was found that the heat set free per pound weight of coal consumed in open grates with solid floors raised the temperature in a room 2·88° Fahr., whilst in the best class of close stoves the same quantity of fuel raised the temperature in the same room 4·48° F. One ton of coal consumed in the close stove was therefore nearly as effective as two tons burned in the open fire grate.

The fuels which formed the subjects of the trials were analysed by Dr. E. J. Ball, Mr. W. F. Ward, and Dr. C. A. Cameron. They were chiefly Wallsend bituminous coal and Welsh anthracite.

Mr. Teale's little book is a very interesting and useful *brochure*, written in somewhat the same style as that employed by the author in his popular little book entitled "Dangers to Health." On the first page of the book we read—"The discovery which I made was this, that *slow* and efficient combustion of coal in house fires depend upon two conditions in combination—one that no current of air shall pass through the grate at the bottom of the fire, the other that the space or chamber under the fire should be kept hot, and that these two points should be secured in ordinary ranges at a cost of a few shillings. The means by which they are attained consist of a simple shield resting on the hearth, whereby the space below the fire is converted into a close chamber."

So far as the more thorough combustion of fuel by slow as compared with quick combustion is concerned, Mr. Teale's statement harmonises with the results of the trials made in connexion with the smoke abatement exhibitions. The latter, however, showed that there was less black smoke from the grates which had grids, or open bottoms, than from those which had solid floors. On the other hand, however, a very slight difference in heat-producing power was found to be possessed by the latter.

Mr. Teale shows the importance of securing slow and more perfect combustion by substituting a solid block of fireclay for the open chamber below the grate.

As the brick becomes heated the fuel burns brightly, but when the fire is low the brick cools and the fire becomes dull. A closed space beneath the grate also answers; it receives the ashes, which can be removed through a door.

Mr. Teale gives the following rules in reference to the management of domestic fire-places:—

“Rule 1.—As much fire-brick and as little iron as possible.—Fire-brick retains, stores, and accumulates heat. Iron runs away with the heat, and chiefly in directions in which the heat is least wanted.

“Rule 2.—The back and sides of the fire-place should be fire-brick.

“Rule 3.—The back of the fire-place should lean, or arch over the fire, so as to become heated by the rising flame. The heated back raises the temperature of the gases and helps them to burn, thereby lessening the smoke, and sends abundant radiant heat, the most valuable product of a fire, into a room.

“Rule 4.—The bottom of the fire or grating should be deep from before backwards, probably not less than 9 inches for a small room—nor more than 11 inches for a large room. Two points are gained by this unusual depth—one that space is allowed for the slanting or arching forwards of the fire-brick back—the other that there is plenty of room for the fire to ‘lie down,’ away from the direct draught up the chimney. The fire is thereby made horizontal and slow burning instead of vertical and quick burning.

“Rule 5.—The slits in the grating should be narrow—perhaps $\frac{1}{4}$ -inch wide for a sitting-room grate, and $\frac{3}{8}$ for a kitchen grate. When the slits are larger than this small cinders fall through, and are wasted.

“Rule 6.—The bars in front should be narrow—less than $\frac{1}{2}$ -inch in thickness, so as not to obstruct much heat, and close together, $1\frac{1}{4}$ -inch apart, so as to prevent coal and cinder from falling forwards, and not more than four in number for an ordinary fire.

“Rule 7.—The chamber beneath the fire should be closed in front by a shield

or ‘economiser,’ the effect of which is to stop all current of air that would pass under the grate and through the fire, and so to keep the chamber, its floor, and its walls at a high temperature.”

In conclusion, we commend the perusal of the two books which form the subject of this notice to all who are interested in the subject of the economy of fuel and the prevention or mitigation of the smoke nuisance. The law relating to the latter is to a great extent administered by the medical officers of health; to those officials the information given in these works and the numerous engravings which they contain will prove of great utility.

Clinical Lectures on the Diseases of Women. By J. MATTHEWS DUNCAN, M.D., &c. London: J. & A. Churchill. 1883. Pp. 443. Second Edition, much enlarged, with Appendices.

THE first edition of these Lectures appeared in 1879, and we are now glad to have an opportunity of correcting an oversight by which they were not then specially noticed in the pages of this Journal. The well-known reputation of their author as an original worker and thinker, and as a popular teacher, secured for them on their first appearance a reception not under ordinary conditions so easily attained by a handful of clinical lectures, dealing, as these did, with a variety of gynæcological subjects in a more or less fragmentary way. We read in the preface to the second edition, which is now before us, that “in America three reprints of the first edition have been published, two at a very low price; and translations have appeared in Italian, German, and Russian.”

The present volume is much enlarged, just doubling the size of its predecessor, the added matter consisting of sixteen new lectures and of seven appendices.

The first point which attracted our notice in this new edition is its dedication to Mr. Lister, “who, by his work in antiseptics, has done more for the safety of lying-in women than any obstetrician,” a truth-telling tribute to the great surgeon whose work stands out amid that of his contemporaries as epoch-making in the history of medicine. It would be imposing upon ourselves a task of needless length and difficulty if we were to attempt a critical and detailed review of the thirty-five lectures and seven appendices contained in this volume. We shall attempt only to give a general sketch of their nature, and subsequently to make more

particular allusion to a few of the doctrines which they bring saliently before us.

Dr. J. Matthews Duncan thus explicitly lays down the general scope of his lectures as delivered to the students of St. Bartholomew's Hospital:—"They do not aspire to completedness, being clinical not systematic. Whole departments are omitted; and in regard to such subjects as are considered there is not even that kind of completedness which should characterise a lecture" (Preface to second edition.) Again: "It will be obvious to the reader that naming authorities and literary references are avoided almost entirely; and this is done for good reasons. The chapters are Clinical Lectures to Students, and the whole object of the teacher was to increase the acquaintance of his pupils with disease." In their style, in their neglect of systematic completeness, in their want of continuity, and in their choice of subjects—which seemed largely to depend on the material from time to time available in the "Martha" ward of St. Bartholomew's—these are essentially clinical lectures rather than formal essays. They frequently deal with symptoms rather than with diseases; and thus, among others, we find separate lectures devoted to retention of mucus, of blood, of urine, and of fæces; to menorrhagia, spasmodic dysmenorrhœa, painful sitting, aching kidney, irritable bladder, while minor displacements of the uterus are also considered chiefly from a symptomatic standpoint. Indeed, the lectures may easily be looked upon as the bedside *impromptus* of an able teacher, who combined with the requisite amount of knowledge and thought an habitual ease of diction, marked now and again by a piece of shrewd humour or a quaint terseness of phrase.

We scarcely know whether to complain of the dogmatism which pervades these samples of Dr. Duncan's teaching—a dogmatism which in places seems to verge on the egotism of a "Sir Oracle." Indeed no one can read them without feeling that, whatever weight Dr. Duncan may in his systematic lectures attach to "authority and literary detail," he is at least quite as much at home when he speaks for himself *ex cathedrâ*. Doubtless the dominance of his individual views enhances the interest attaching to these utterances, but we are not seldom disappointed in looking for the exact grounds upon which the students of St. Bartholomew's were invited summarily to dismiss from their minds the opinions of scarcely less eminent authorities, and to replace them by those of their teacher. We incline to the view that Dr. Duncan does sometimes err on the

side of dogmatism, and that when he mentions opinions which are held by many gynæcologists of repute and experience he is bound to place before his pupils his full reason for dissenting from them, and, if need be, to convince them of his correctness by dint of reasons rather than by the sheer weight of his authority. If such a process would detract from the sharpness of his lectures it would appear more reasonable to avoid the mention of opinions from which he dissents rather than, having paraded them before his hearers as shapeless invertebrates, to dismiss them as easily and with the same result as Glendower could "call spirits from the vasty deep." An example of this manner of treating opinions which conflict with his own is found in the lecture on Spasmodic Dysmenorrhœa—the name preferred by Dr. Duncan to neuralgic dysmenorrhœa, and both of which he insists are synonymous with the form of painful menstruation usually described as distinct, under the term obstructive or mechanical dysmenorrhœa. "This disease, called neuralgic, obstructive, mechanical, or spasmodic, is a disease of the nature of a neurosis, in which the contractions of the uterus cause great pain." And again we read that "the disease is, in its essence, morbid contractions of the uterus occurring in connexion with menstruation." But Dr. Duncan, himself, tells us truly in another lecture that dysmenorrhœa is no more a disease than is "painful sitting"—both are symptoms. Admitting fully, what we believe has never been questioned, that the pain in many of these cases is due to "morbid contractions," the problem is still open as to the causes upon which this common symptom hinges.

This problem can only be solved, we are rightly told, by the study of uncomplicated cases, which we may say are comparatively rarely met with. In practice we most often find "mixed" cases, that is to say, cases in which there is more than one cause for pain present and apparent. We do not hold with the author that "simple cases are abundant," or that those "constitute the majority" in which "no disease, tangible or visible, can be discovered." Still such cases are met with, and to them we think the term "neuralgic dysmenorrhœa" best suited for precisely two reasons, upon which Dr. Duncan himself applies the term neuralgia "to a disease for which no further explanation can be given" than that it implies pain in the part (on Painful Sitting, p. 238). That he has no radical objection to the word "neuralgic" is further shown in the lecture on Ovaritis, where he speaks of ovarian neuralgia as a common affection, "characterised by absence of every sign of disease and of

every regular symptom except pain in the region of one or other ovary." Why not apply the same term on exactly the same lines to these cases of dysmenorrhœa. Again, Dr. Duncan scouts the "obstructive" theory as in any case adequate for the explanation of painful contractions of the uterus during menstruation. He supports his position in this respect by two observations only; firstly, by the fact that he has found the uterine canal clear to the passage of bougies while the woman was in the agonies of dysmenorrhœa; and secondly, by the statement that the smallest "pin's-point os uteri" "is quite enough to allow a hundred times as much blood to pass as there is any occasion for, or as offers to pass." With reference to the first observation, it may be that the bougies were passed in cases which could not properly be described as obstructive, while in any case the passage of a bougie inwards does not necessarily prove that the blood could find ready egress. This observation constitutes, therefore, an insufficient reason, while the second amounts simply to an unproven assertion. The simple form of alleged obstructive dysmenorrhœa is met with during early menstrual life, before secondary causes have been induced, in patients with a characteristically small os externum, the so-called "pin-hole os." We believe also that clinical evidence shows that with this stenosis of the os externum is commonly associated a like constriction and rigidity of the os internum. In such cases the consensus of opinion clearly demonstrates that a peculiar form of pain accompanies the menstrual flow; and that the cause of this pain is referable to an impeded outflow of the blood appears to us to be equally clearly shown by clinical and pathological evidence, by analogy, and by the effects of treatment. The flow is interrupted, often clotted even when the amount is not excessive, and the pains complained of are likewise interrupted, coinciding in their appearance with the discharge of blood which has accumulated within the uterus during the intervals. The character of the pains is likewise suggestive of an impediment to be overcome, as in the analogous cases of intestinal or vesical colic. In a simple case they are present only during the period of the flow, though uterine contractions certainly precede its appearance. It would also seem probable from some recent observations that the obstruction may give rise to a certain amount of compensatory hypertrophy of the uterus, an example of which was shown some time since at a meeting of the Dublin Obstetrical Society by Dr. Atthill.

Finally, the results of treatment seem to favour the obstructive

theory; and even Dr. Duncan admits that he knows of no drug which can compare with mechanical treatment in direct utility. And here we find Dr. Duncan, who uses graduated bougies in preference to any cutting operation, after all his disbelief in the mechanical theory of causation, recommending his pupils and readers to proceed with the use of his bougies "so as to stretch and distend the internal os uteri." From our own experience we would prefer the slitting operation, equally devoid of danger in competent hands, by means of which, after a temporary benefit only has resulted from the dilating process, we have seen cases of relapse completely cured.

We have dwelt, perhaps, at a somewhat undue length on this lecture on "Spasmodic Dysmenorrhœa" as affording an example of the chief defect which we find throughout the work. We are not so much concerned with the correctness or otherwise of Dr. Duncan's views, but we question whether he has always given adequate reasons for accepting them, and also whether he has represented other views, at variance with his, in a sufficiently full and impartial manner. He seems sometimes to trust too much to the influence of his own individual judgment upon the minds of his hearers, and in this respect these lectures suffer from their author's dogmatism. The lectures which most repay a careful study are those on "Mixed Abortion," on "Retention of Mucus, of Blood, of Urine, and of Fæces" (4); those on "Perimetritis and Parametritis" (3); on "Irritable Bladder," "Hepatic Disease in Gynæcology and Obstetrics," and "Minor Displacements of the Uterus." These all treat more of the medical than of the surgical side of gynæcology, and to this, their stated intention, we may attribute the fact that some of the greatest problems of the day in this specialty, notably laceration of the cervix, are left untouched.

The seven essays inserted as appendices are full of interesting thought and matter. They afford good illustrations of Dr. Duncan's zeal in exploring the neglected byways of practice. It is this originality which gives to this, as to his other works, their highest value—that of quickening the reader's intelligence by opening up to him new and fruitful regions upon which to work. Dr. Duncan is essentially an author who compels his readers to think.

It is not, therefore, to beginners that we commend this book, though it does mainly consist of lectures to students. Its careful study will, however, serve to strengthen and supplement a previously sound knowledge of the subjects with which it deals. The

competent reader will find in it much that will both interest and assist him in his own work, and not a little, we venture also to think, upon which he may have reasons for differing from its able author.

RECENT WORKS ON VACCINATION.

1. *Essentials of Vaccination. A Compilation of Facts relating to Vaccine Inoculation and its Influence in the prevention of Small-pox.* By W. A. HARDAWAY, M.D., Professor of Diseases of the Skin in the Post-Graduate Faculty of the Missouri Medical College of St. Louis, &c. Pp. 146. Chicago. 1882.
2. *Some Practical Observations on Vaccination.* By W. H. WHITEWAY WILKINSON, L.R.C.P.Ed., &c., one of the Public Vaccinators for the Parish of St. Mary, Islington. Pp. 40. London: J. & A. Churchill. 1882.
3. *A Momentous Education Question for the consideration of Parents and others who desire the well-being of the Rising Generation.* By P. A. SILJESTRÖM, late Member of the Swedish Parliament. Translated from the Swedish by Y. Y. GARTER WILKINSON. Pp. 29. London: William Young.

1. THIS very excellent little manual is so far a compilation, that it quotes largely from previous works on the subject, and in every case gives full credit to the author from whom the quotation is taken, but in addition there is much original matter, the result of shrewd observation. Such a work as this was badly wanted, which would in a short compass give the essential facts necessary for the student of vaccination unencumbered by long statistical tables and historical anecdotes.

As we would naturally expect, the subject of animal vaccination receives early and prominent attention, and the greater importance attached to this subject in America than in our own country may be gathered from the following extract:—"It is safe to say that there exists little, if any, long humanised vaccine lymph in the United States to-day, the current stocks being either bovine or virus of recent removes."

Such a statement shows that the greater protective efficiency and safety of bovine virus is fully recognised in America.

The question of animal *versus* long humanised lymph is fully

entered into, and a large amount of evidence (including extracts from the admirable paper by Dr. Cameron, M.P. for Glasgow, in the *Fortnightly Review* for May, 1881) is adduced, showing that the protective power of long humanised lymph has deteriorated, and the consequent necessity of reverting to animal lymph.

The modifications and complications of vaccination are thoroughly discussed, including the cases of so-called vaccinia-gangrænosa described by Hutchinson and Stokes. In treating of eczema after vaccination attention is drawn to the cases recorded by Mr. Tait, in which cases of long-standing eczema in children were rapidly cured by vaccination.

Vaccinal syphilis, of course, engages considerable attention, and clear distinction is drawn between those cases of latent congenital syphilis which are rendered active by vaccination and those in which the operation is the means of conveying the disease. That the lymph is not always at fault in the latter cases is shown by a case by Dr. R. W. Taylor, quoted from the *Arch. Dermatol.*, Vol. II., 1876, in which several persons were vaccinated by the same scarificator without cleaning it. An infant who was vaccinated immediately after a prostitute suffering from syphilis developed a chancre at the seat of inoculation. During the smallpox epidemic of 1870 the author noted the fact that Europeans were better vaccinated than Americans, and this he attributes to the fact that in the United States the practice of using dry crusts instead of the better methods of preserving lymph prevalent in Europe was almost universal.

This little book concludes with a chapter on the objections to vaccination urged by the anti-vaccinatists, the most cogent proof of the protective power of vaccination being drawn from the medical history of the Franco-German war, at which time, according to Dr. Welch, smallpox prevailed to an alarming extent. The German army lost from this cause 263 men, while the French loss was 23,468, although the latter army was at no time more than half the size of the former. In Germany almost every infant is vaccinated before it is a year old, and every soldier is vaccinated on entering the army, and if the operation fail it is repeated again and again until some result is obtained or the surgeon is satisfied of vaccinal insusceptibility. In the French army neither vaccination nor re-vaccination was compulsory.

In conclusion, we would recommend every practitioner who is much engaged in vaccination carefully to read this book.

2. In the preface the author states he wishes to set forth the practical deductions he has drawn from twelve years' experience as Public Vaccinator, and from having vaccinated 20,000 persons, and that at a future time he hopes to be able to go deeper into the subject. It is to be hoped that when this more comprehensive work appears we may be enabled to find in it something to justify its publication, which we have failed to do in the present instance. In his directions for the examination of children previous to vaccination the following remarkable statements are to be found:—"By carefully looking over a child you ascertain the presence or absence of eruptions, . . . also *deformities* and *injuries*." What the latter may have to do with vaccination he does not say. Further on—"By examination of the anus information is obtained as to syphilitic eruption or *thrush*."

He disposes of animal vaccination as follows:—"Latterly it has become a fashion to vaccinate with lymph which is exuded from calves. I have done but little in this department; but remembering the fact that primary vaccinia took its origin in a totally different manner I shall await the time until the protective value of this lymph is more fully developed."

What he means by the foregoing we are at a loss to understand. The book would really be amusing to read if it was not so deleterious.

3. We notice this pamphlet only in order to caution the unwary. After reading through several pages you find that it is an anti-vaccination tirade, the arguments adduced being even less deserving of notice than those usually found in such publications.

A Pharmacopœia of Selected Remedies. By EDMUND A. KIRBY, M.D., M.R.C.S., Eng. Sixth Edition. Enlarged and Revised. London: H. K. Lewis. 1883. Large 8vo. Pp. 134.

THE successive editions of Dr. Kirby's "Formulæ" are so well known, and have been so highly appreciated, that the task of reviewing the "Pharmacopœia of Selected Remedies" is rendered comparatively easy.

The first part consists of a "Materia Medica" which has been compiled chiefly, but not exclusively, from the British and United States Pharmacopœias. Non-official remedies are included, being denoted by *Italics*. In the Materia Medica the "Selected Reme-

dies” are arranged alphabetically, with their dose and mode of administration.

The *Materia Medica* is practically an index to the “*Formulæ*,” which make up the second part of the work, under the headings “*Formulæ for Medicines for Internal Administration*,” and “*Formulæ for Remedies for Topical Application*,” such as collyria, liniments, lotions, pigments, dusting powders, poultices, gargles, &c.

The third part of the book treats of alimentation in disease, of air, massage, electricity, water, and other supplementary remedial agents, their uses and modes of application. Several hospital dietaries are given, besides special diets for particular diseases, with tables showing the relative nutritive and therapeutical value of various dietetic substances.

An index of diseases and suitable remedies is appended, which cannot fail to be useful.

The foregoing analysis of the contents of the work will be sufficient to indicate its general scope and utility. We have merely to add that the information is as accurate as it is concise, and that the publishers deserve great credit for the attractive way in which the book is published and illustrated.

Notes on Poisons. A Toxicological Chart, designed for ready reference. By J. MAYNE, M.D., &c. London: J. & A. Churchill. 1882.

THIS is we perceive, although not so stated, a reprint in the form of a chart of a chapter in the *Therapeutical Remembrancer*, the second edition of which was reviewed in this Journal of last October. We then showed what we believed to be the incompleteness of that particular portion of the book, by noting the omission of all mention of any of the now well-known physiological antidotes for poisons, even for such an ordinary one as opium. The *Therapeutical Remembrancer* seems to have been received very unfavourably not only by reviewers generally, but also—as we gather by a letter in a weekly contemporary from the author himself—by “amateur monitors” who have animadverted freely on the shortcomings the work displays. Dr. Mayne explains that the first edition of his publication appeared thirty years ago; and no change would certainly seem to have been made in its contents since that period. Such being the case we must confess that we look upon

the republication of the *Remembrancer*, and consequently of these "Notes on Poisons," as reprehensible, because both are useless as well as misleading additions to the literature of the present day.

The Frog: an Introduction to Anatomy and Histology. By A. MILNES MARSHALL, M.D., &c. Manchester: J. E. Cornish. London: Smith, Elder & Co. 1882. Pp. 86.

THIS manual contains the first part of the Owens' College course of elementary biology.

It commences with an introduction which gives the rules of the laboratory, and general directions for the use of the microscope and the preparation of microscopic objects. Then, in a series of chapters, the anatomy of the frog is briefly described, with directions for the dissection and demonstration of each part. In the chapter on the vascular system the microscopic appearances of the blood of the frog and of human blood are given, together with directions for the examination of the circulation in the web of the foot. In the chapter on the nervous system, the microscopic structure of nerve-fibre and ganglionic cells is noticed; while in Chapter III., on elementary histology, directions for the microscopic examination of the epithelia, glands, muscle, connective tissue, cartilage, and bone find a place. There can be no doubt that this book will prove of much service to beginners in anatomical work, particularly if they have a teacher at hand to supplement the occasionally too short directions. On the whole, however, it seems to us that it is not up to the level of the chapter on the frog in Huxley and Martin's *Elementary Biology*.

Dr. Norris's Third Corpuscle of the Blood. A Criticism and Refutation. By MRS. ERNEST HART. London, 1882. Pp. 12.

PRIOR to the publication of Dr. Norris's book, "The Physiology and Pathology of the Blood,"^a the discovery of the third or invisible corpuscle was made known by papers, demonstrations, and other means. From the first, Mrs. Hart has maintained, as the result of her own observations, that the supposed discovery rested on error, and that the new corpuscle was only an ordinary red corpuscle which had been forced by the methods of examination to discharge its colouring matter.

^a See *Dublin Journal of Medical Science*. August, 1882. P. 117.

In the present very able paper, reprinted from the *London Medical Record*, Mrs. Hart repeats her objections to Dr. Norris's views, and having carefully gone over all his later experiments, and having fully tested his newest methods, comes to the conclusion at which she previously arrived—namely, that the invisible corpuscle is an artificial product, due to the discharge of the hæmoglobin from a red corpuscle, and that if this discharge be prevented, as may be done by complete action on the blood of a 2 per cent. solution of osmic acid, the third corpuscle is not to be found.

Mrs. Hart brings a rather serious charge against Dr. Norris. In his book he professes to reprint his original paper of 1878, and also to answer Mrs. Hart's criticisms on it. But the paper has been altered, apparently in consequence of the criticisms, and to such an extent as to make Mrs. Hart's strictures in part unintelligible, and to destroy their force. This has been done without any announcement of the change having been made in the preface or otherwise. Of this proceeding Mrs. Hart, in our opinion, very justly complains.

Micro-Photography. By A. COWLEY MALLEY, M.B., Univ. Dubl.
London: H. K. Lewis. 1883. 8vo. Pp. 150.

ANYTHING which tends to popularise scientific pursuits, or to give assistance to those commencing their study, is of use; and of such a character undoubtedly is this little work.

Into the compass of a small work of 150 pages the author has condensed the structure of the microscope, the methods of preparing microscopic objects, and the theory and practice of both the wet and dry processes in photography—a task which few would like to undertake, but which is nevertheless fairly well carried out.

If the book is intended for those who know nothing about either microscopy or photography, it is essentially a useful work, as it brings together details in both subjects rarely met with in one volume. But if it be consulted by those who possess a knowledge of one of those subjects—and it is in the ranks of such that we find most who are willing to work at micro-photography—we think there are better manuals to be had.

In the Introduction it is stated that the “aim has been not so much to supply new methods as to increase the popularity of those

already known by showing the facility of their application;" but the laudable spirit of this paragraph is spoiled by the Woodbury type frontispiece which accompanies the work. Any person, microscopist or otherwise, who is aware of the natural appearance of the objects depicted in it will be at once struck with the idea that something is wrong—at least three out of the four subjects photographed are out of focus. It is difficult to see the bacillus anthracis represented in lung tissue, and utterly impossible to make out any details in its form; and the two photographs of diatoms will not bear a magnifying power of a couple of diameters, the markings on *Pleurosigma Spencerii* being a hazy, blurred cross-hatching on one side only of the diatom valve.

But the main fault in the text seems to be the other extreme. Details are gone into very fully, and, no doubt, rightly so, but from personal experience we can assert that they are not so necessary as the author would seem to believe. We have before us photographs, exquisitely sharp, taken with far simpler apparatus than any represented in the book; in fact, adjustments to the objective, substage condensers, and such like, are worse than useless—a positive harm in putting so many reflecting surfaces in the way, and otherwise complicating matters. Besides any allowance for the difference between the chemical and visual foci is sure to give a blurred picture, the amount of difference being so small that one is certain to overdo it.

The chapter on "Microscopic Lenses" is useful, giving in a small space information that would be required by any one working at the subject; but the chapter on the "Preparation of Specimens" is rather meagre, none of the brown or red anilines being mentioned (except those in Gibbes' method for bacilli). A description of an old form of freezing microtome is given, but there is no mention of other much simpler and cleaner ones which have been brought out since, nor any instructions for cutting sections by hand by embedding the tissue in wax and oil, &c.

The remainder of the book is devoted to Photography, and is very fair; it would be a very considerable help to any one who was only a microscopist. But as to the arrangement of camera, &c., there is a great deal of complication, one of the lists of memoranda being almost sufficient to make a tyro hopeless of getting a successful result.

No mention is made of perhaps the simplest method—that of fastening the objective and a small stage in front of an ordinary

“magic lantern,” focussing on a piece of paper, turning down the gas to darken the room, and putting a sensitive plate where the paper stood. We have seen far better results from this method in an ordinary room without a camera or even a “dark room” than any of the photographs in the book, a piece of red glass answering as a cap for the lantern, and subsequently to give a non-actinic light during development.

However, the book is a useful one as far as it goes, and it might save an amateur the necessity of purchasing two or three larger volumes, which would probably give him more than he required.

THE ANÆSTHETIC INFLUENCE OF BROMIDE OF ETHYL.

THE question of superiority among anæsthetics is a debatable one. However, in discussing the merits of bromide of ethyl it is not necessary to interfere with any other drug of the same class. The action of bromide of ethyl is very evanescent, and on that account it can never take the place of chloroform or ether for surgical operations which require any prolonged anæsthesia; but for all operations that can be performed in one or two minutes the use of this agent leaves nothing to be desired. Dr. J. J. Chisholm, in the *Med. News* for Jan. 27th, says that one drachm of the bromide of ethyl will put any patient into deep narcosis in less than a minute. This sleep will not last more than one or two minutes; the patient awakes from it suddenly, as if from ordinary sleep, with brain as clear as before the inhalation, and with neither nausea, headache, or heaviness of any kind. These effects, however, must be obtained from the first inhalation or primary anæsthesia; repeated doses of it during an operation cause the same unpleasant symptoms that chloroform or ether does, and thus the ethyl loses all its advantages. The surgeon should have everything in readiness, and must be methodical in order to use successfully and take advantage of this evanescent narcosis. To ethylise efficiently a saturated vapour must be used, and the inhaler must not be taken from the patient's face once the apparatus has been put over the nose and mouth. It needs confidence in the safety of the anæsthetic to push it in its concentrated form, but in no other way can the best effects of a primary anæsthesia be produced. Dr. Chisholm has found it of great use in minor operations about the eyes—such as in passing nasal probes, splitting of the canaliculi, scraping out the contents of tarsal cysts, opening lachrymal abscesses, cutting defective muscles in squint, removing the elliptical piece of skin of the lid in ptosis or entropion, performing iridectomies for glaucoma, or for making of artificial pupils, or for optico-ciliary neurotomy. In dental practice it would seem to be of great service.

J. K. I.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.^a

By WALTER G. SMITH, M.D., Dublin; F.K.Q.C.P.; King's Professor of Materia Medica, School of Physic, Trin. Coll. Dub.; Physician to Sir P. Dun's Hospital.

ACIDS.

(a.) *Boracic Acid*.—Dr. James L. Minor says (*Va. Med. Monthly*) that he has found boracic acid powder a most excellent application to granular lids. It is used as follows:—The lids being thoroughly everted, the powder is spread freely over the whole conjunctival surface with a camel's hair brush. The acid is generously applied, and mixing with the discharge from the lids, it readily gains access to the cracks and crevices between the granulations, and thus comes into direct contact with the entire surface upon which it is intended to act. The immediate effect is to increase lachrymation and to cause a burning, gritty, sensation, with some pain. These symptoms usually pass off within ten minutes, and are followed by an amelioration of all the symptoms which existed before the application of the acid. The granulations may look less gorged and prominent, but he has not been able to discover much change in the naked-eye appearance of the conjunctiva after one application. The powder was used three times a week. The improvement is so gradual that it is almost imperceptible as it progresses, but Dr. Minor has derived more satisfactory results from the use of this powder than from the ordinary caustic or astringent applications.—(*Medical and Surgical Reporter*, 1882.)

^a The author of this Report, desirous that no contribution to the subjects of Materia Medica and Therapeutics should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

(b.) *Chrysophanic and Pyrogallic Acids*.—At a recent meeting of the New York Dermatological Society Dr. Morrow formulated the following conclusions touching chrysophanic and pyrogallic acids:—

1. That chrysophanic acid is perhaps the most efficient agent known to the profession for the external treatment of certain cases of psoriasis, especially chronic cases which have resisted other methods of treatment.

2. That its range of application is limited; in children, in patients with sensitive, irritable skins, and in acute cases generally, it is contra-indicated.

3. That in psoriasis affecting the face and hairy scalp the intensely irritating action, producing puffiness of the face and eyelids, and its discolouring effect upon the hair, render its employment impossible.

4. That it is prompt in its action, a week or ten days' active treatment being usually sufficient to develop its full therapeutic efficacy.

5. That its curative effect is only temporary; it does not afford a safeguard against relapses.

6. That it probably acts only locally and by virtue of its irritating properties, setting up a substitute inflammation, which modifies or corrects the tendency to the inflammatory overgrowth of epidermic cells.

7. That its employment is attended with certain objectionable results, some of which always follow its use, while others seem to depend upon idiosyncrasy, physiological and morbid predispositions, &c.

8. That a brownish, prune-juice discoloration of the skin, which persists long after the application is discontinued, a reddish staining of the hair and nails, and an indelible dyeing of the clothing, are inseparable from its use.

9. That the erythematous and furuncular inflammations which occasionally follow its use may be classed as incidental effects, as they do not always depend upon an excessive strength of the preparation employed, but are frequently manifest after a mild application; intense dermatitis, resulting in exfoliation of the epidermis in large flakes, has been observed after an application of ten grains to the ounce.

10. That the strength of the ointment recommended by Balmanno Squire (two drachms to one ounce) is excessive; a milder strength (twenty grains up to one drachm to one ounce) being usually sufficient to develop the full therapeutical virtues of the drug.

11. That in other diseases for which it has been recommended—as acne, favus, pityriasis versicolor, eczema marginatum, &c.—chrysophanic acid possesses no advantages over certain other drugs which are commonly used.

12. That pyrogallie acid is a drug which is free from some of the more objectionable features of chrysophanic acid. It does not (in ten-per-cent. ointment) inflame the skin, it does not produce œdema of the face when applied to the scalp, and the discoloration is much less marked and permanent.

13. That it should, nevertheless, be used with caution, as pernicious results have followed its too free use. When freely used for two or three weeks it produces an olive-green or tarry condition of the urine, with prostration, febrile disturbance, and other general symptoms.

14. That its curative action in psoriasis is much less rapid, but apparently more permanent than that of chrysophanic acid.

15. That its freedom from irritation and its absence of odour render it an admirable substitute for chrysophanic acid and oil of cade in diseases affecting the scalp and face.

16. That while its effect in psoriasis is slower and less brilliant than that of chrysophanic acid, its range of therapeutical action is much more extended. It causes to disappear the nodosities of lupus, the hyperplasiæ of syphilis, epidermic and palpillary hypertrophies, and seems to have a good effect in promoting the cicatrization of wounds.

17. That it seems to act by virtue of its stimulant and irritating properties; it hardens and shrinks the tissues, shrivels up unhealthy granulations, and acts as a hæmostatic.—(*American Practitioner.*)

(c.) *Sclerotinic Acid.*—Sclerotinic acid is a substance without taste or odour, feebly acid and hygrometric, but not deliquescent. It has been obtained from ergot by MM. Dragendorff and Sodevissotzky; good ergot containing about four or four and one-half per cent. of the substance. In their experiments on frogs they found that subcutaneous injection of half a grain caused almost complete paralysis, commencing in the hind limbs; there was no reaction on irritation; the cornea was insensible; from time to time a feeble cardiac contraction was noticed. This state persisted for some days; then there was slow amelioration; finally a fresh attack of paralysis, followed by death.

In 1879 Nikitin published a very complete work on the physiological and therapeutical action of sclerotinic acid.

The principal symptoms observed by experimentation on various animals were paralysis, diminution of blood-pressure and of the contractile force of the heart in cold-blooded animals.

In acute poisoning he found diminution of temperature up to the time of death, gradual slowing of respiration, which underwent complete arrest before the arrest of circulation in fatal cases, and finally augmentation of the peristaltic movements of the intestine. From many experiments, Nikitin concluded that sclerotinic acid induced uterine contractions, whether the organ was gravid or not, and rendered the contractions stronger when they already existed.

As regards the therapeutical action of the substance, Nikitin recommends the employment of sclerotinic acid, in the dose of three grains, to produce uterine contraction. He has never observed tetanic contraction of the uterus under its use. The mortal dose in the adult is about one hundred and fifty grains.

Among other observers, opinions regarding the therapeutical value of the drug are widely divergent. Hobert, who first administered it, obtained no beneficial results from strong doses in pulmonary hæmorrhage or hæmophilia.

Ganguillet found that strong doses (fifteen grains) augmented the duration of uterine contraction during labour; this result was obtained about half an hour after the administration of the drug; he gave the acid in an equal quantity of powdered sugar. Rennert injected the acid subcutaneously and obtained results which he considered inferior to those obtained from the use of ergotin. Professor Prevost, of Geneva, has used this substance in metrorrhagia from fibromatous tumours, and considers it as active, if not more so, than ergotin. Stumpf asserts having obtained good results in various forms of hæmorrhage, and recommends the employment of strong doses. The observations are, it must be said, as yet, too few to pronounce definitively on the therapeutical value of the drug.—(*Med. and Surg. Rep.*, 1882.)

(*d.*) *Salicylic Acid*.—1. *As a remedy for corns*.—Dr. Traill Green writes as follows:—

“I wish to call attention to Mr. Gezou’s remedy for corns, published in this journal, July 17, 1880. In the ‘Transactions of the Medical Society of Pennsylvania,’ for the year 1876, p. 283, I reported the use of salicylic acid in the treatment of corns. I used it first in the treatment of soft corns, but very soon found it would remove hard ones as well. I applied it on cotton, and I can testify

to the certainty of the effects of salicylic acid in the treatment of these painful excrescences on the toes.

“It occurred to me, when I read Mr. Gezou’s prescription, that the collodion which he employed to dissolve the acid would keep it well applied to the corn, and I have used it as prepared by him, in a great many cases, since July, 1880, and I can say with constant success. I have had a preference expressed in favour of the application of the acid on cotton, but I have, in almost all of my cases, used Mr. Gezou’s preparation since July, 1880.

“The collodion, as already mentioned, fixes the acid on the diseased part, and gives speedy relief by protecting it from friction. The *cannabis indica* acts as an anodyne, and the acid reduces and loosens the corn, so that it comes off in four or five days, adhering to the collodion. The remedy is applied with a camel’s hair pencil, and if the corn is not well cured, the application may be repeated. In four or five days the patient should use a warm foot-bath and rub off the collodion. If any portion of the corn remains the acid should be applied again, and the treatment continued until the whole of the corn has disappeared. The skin will be soft and smooth, as in the healthy state.

“The mixture dries immediately, and does not prevent for a moment the use of the stocking.

“I have used salicylic acid in the treatment of bunions with like good results.

“Collodion as found in the shops makes a good mixture, but I have found Dr. Edward R. Squibb’s flexible collodion preferable, as it makes, with the other ingredients of the remedy, a denser fluid. The extract of *cannabis* should be the solid extract.

“I am sure no remedy has ever been proposed which is so useful in those painful affections of the feet as salicylic acid.

“Mr. Gezou’s formula is:—

“R. Salicylic acid, -	-	30 parts or grs. 30.
Ext. <i>cannabis indicæ</i> , -	-	5 parts or grs. 5.
Collodion, -	-	240 parts or f ̄ ss.”

—(*Med. and Surg. Rep.*, 1882.)

2. *Physiological Action*.—Professor Quincke regards disturbances of respiration and hearing, together with giddiness, as the most frequent phenomena which are apt to occur after continued use of sodium salicylate. The respiratory disturbance consists essentially in an excessive deepening of the respiratory efforts, often combined with a subjective feeling of dyspnœa, but there is no considerable

change in the frequency of respiration, nor any evidence of obstruction in the organs of respiration and circulation. The salicylic dyspnœa appeared under considerable variations in the dose—viz., from 4–12 grammes *per diem*. Dyspnœa was sometimes the only collateral symptom; in one case—a diabetic—delirium and hallucinations were superadded.

The serious symptoms usually disappeared with the suspension of the medicine; in one case, however, the issue was fatal.

A girl, seventeen years of age, who had suffered from rheumatism a year ago, took, in the course of three days, 34 grammes of sodium salicylate. This gave rise to buzzing in the ears, giddiness, nausea, and dyspnœa, and she sank.

At the autopsy, hyperæmia of the brain, skin, kidneys and lungs was observed. The salt was detected in the urine, blood, heart, pericardial serum, bile, and liver, but not in the brain substance. From experiments on animals, coupled with clinical observations on man, it appears that salicylic acid acts especially upon the nervous system, and, in particular, as an excitant of the respiratory centre. Salicylic dyspnœa most closely resembles the hurried breathing that precedes diabetic coma. According to Quincke it would seem that diabetics are especially liable to salicylic dyspnœa, the occurrence of which is also favoured by other circumstances impeding respiration—*e.g.*, infiltration of the apex of the lung, anæmia, weak heart. In one diabetic patient the dyspnœa was both objectively and subjectively relieved on several occasions by the exhibition of extract of quebracho. Quincke is of the opinion that the onset of dyspnœa is no reason for the withdrawal of the medicine, although greater significance is to be attributed to it than to the auditory disturbances, and the patient should be closely watched. In general it may be said that there is less need for caution in giving single anti-febrile doses than in continuing the salt for any length of time, when cumulative action may manifest itself. With this drug, as with other nervines, individual susceptibility varies greatly.—(*Centralbl. für die ges. Therapie. Berl. klin. Wochenschr.*, Nov., 1882.)

ALKALOIDS.

(a.) *Atropia, Toxic Effects from*.—Knapp had under treatment a lady twenty-five years old in whose ear he administered a few drops of a one-half per cent. solution of atropia. The otalgia ceased, but unmistakable toxic symptoms soon appeared; four hours after the

application of the atropia “the hands and feet began to swell, the face became scarlet, the eyes puffed, the tongue thick and the throat extremely dry, the under-lip hung down, the heart palpitated and the patient complained of great heat.” These symptoms lasted for several hours and then disappeared entirely. A weaker solution afterwards applied to the ear had no disagreeable effect. The resorption must have taken place through the glands, as there was not the slightest excoriation in the ear.—(*Zeitschr. f. Ohrenheilk.*, XI., p. 292. *Therap. Gazette*.)

(b.) *Strychnia* (1), *Antidote for*.—Messrs. Greville Williams and Waters (“Proceedings of the Royal Society,” XXXI., p. 162) have discovered an antidote for strychnine in the organic base first prepared by the former, by distilling cinchonine with caustic potash, and to which he assigned the name β lutidine. Having ascertained, by experiments upon frogs, that β lutidine causes a distinct increase in the tonicity of both cardiac and voluntary muscular tissues—also retardation of the heart’s beat; that it arrests the inhibitory power of the vagus; and that, by its action upon the nerve-cells of the spinal cord it, in the first place, lengthens the time of reflex action, and then arrests that function—they proceeded to test its direct counteraction to strychnine. The brains of frogs were destroyed in the usual way. An animal was then treated with β lutidine till reflex action disappeared, when the subsequent administration of strychnine was not followed by the usual results. To another frog strychnine was given till strychnine tetanus was produced, when it was found that the subsequent administration of lutidine caused the tetanus to pass off. The almost simultaneous administration of the two bases was not followed by tetanus. The results of these experiments are most promising; and it is to be hoped that the fanaticism of the anti-vivisectioning portion of the community will not be influential to prevent the use of β lutidine in practical toxicology.

(2) *Excretion of*.—There has been, perhaps, no fact which has caused so much dispute as the manner in which strychnia is excreted from the body, and if it is chemically decomposed or not. A few months ago, in Gratz, suicide was committed by strychnia. The attending physician reported that he had found the strychnia in the urine. This led to a dispute in the medical journals.

To decide the question Dr. J. Kratter (*Sep. Abd. Wien. med. Wchft*, 8, 9, 10, 1882; *ref. Deutsch. medizin. Zeit.*, Aug. 10, 1882) has instituted a number of experiments. He gives, what others

have usually omitted, all the details of his investigations, and especially the test employed, which was Dragendorff's method. Urine is acidulated with diluted sulphuric acid, in the water bath boiled down one-half, alcohol added; boiled; when cold, filtered, washed with alcohol and the quantity of fluid narrowed down. The acid solution is then shaken with chloroform, aq. ammoniæ added, and the same done with the ammoniacal solution. The other process is the usual one. At last, on a watch glass, concentrated sulphuric acid and bichromate of potash form the reactions. Beautiful violet stripes are noted wherever the latter comes in contact with strychnia.

The results of these experiments are as follows:—Strychnia, no matter how introduced, is rapidly absorbed and excreted totally unaltered by the urine. This excretion begins already within the first hour after the introduction of the drug into the system, and is ended, at latest, within forty-eight hours, when the last trace of the whole dose can be demonstrated in the urine. The idea of some, that strychnia was deposited in the liver, is not tenable, nor is it probable. Any accumulative action may simply be explained by the fact that a new irritant acts on the nerve-centres, the former irritation of which had not totally ceased as yet, and equilibrium not having been re-established before a new dose disturbs it *de novo*.—(*Med. and Surg. Rep.*, Nov., 1882.)

(c.) *Aconitia*.—In the last Report (*Dubl. Journ. Med. Sci.*, Oct., 1882) attention was directed at some length to the important question of the qualitative and quantitative differences of the varieties of "aconitine" met with in commerce and prescribed by physicians.

In an exhaustive article on the Preparations of Aconite in the *Ephemeris of Pharmacy*, Dr. Squibb says:—

"In the use of aconitia for medical purposes it would seem to be essential that it should first be tested, and as this physiological test is simple and easy, and within the reach of all, it seems better adapted to general use than chemical testing, and two or three graduated pipettes will enable any one to apply the test. No aconitia should be accepted which will not give a distinct impression from $\frac{1}{100}$ of a grain or .08 milligram diluted to the measure of one fluid drachm or 3.7 c. c. This is not too high a standard, for the reason that the aconitia of Duquesnel will give the impression from $\frac{1}{1000}$ of a grain or .065 milligram. The dose of such aconitia to begin with need not be smaller than $\frac{1}{100}$ of a grain or .65 milligram three times a day, given in solution diluted to four fluid drachms or

fifteen c. c., and always on an empty stomach. Should no effect be obtained within twenty-four hours, the intervals between the doses should be shortened, first, to four hours, then to three, before the dose is increased. If the commencing dose be $\frac{1}{200}$ of a grain, the first intervals should be shorter—say every three hours. The solution should be swallowed with as little contact with the mouth as practicable if the sensation there is to be avoided. But if used for trigeminal neuralgia, the mouth impression should certainly not be avoided, but should rather be sought for and be made as strong as possible.

“For external use there is probably no form better or more convenient than an oleate of aconitia, made by dissolving two grains or one hundred and thirty milligrams in ninety-eight grains of oleic acid. A fluid ounce of oleic acid weighing four hundred and twelve grains requires 8.25 grains of aconitia to make a two-per-cent. solution. Each minim of this oleate contains .0172 of a grain or about $\frac{11}{600}$ of a grain, and this quantity applied locally and repeated according to circumstances should be an efficient dosage, and should in a short time produce constitutional effects by its absorption. It should be applied to the surface by the cork of the vial, or by some non-absorbent, without friction, and about the head and face needs no covering; great care must be taken that it does not get into the eye. In using it around the eyes this caution must never be forgotten. If applied under the clothing it should be covered with oiled silk or rubber tissue. Local neuralgias are much better reached by the dermic or epidermic method of treatment.

“One hundred drops of the oleate make a fluid drachm when dropped from an ordinary half-ounce vial, thus making a little more than 1.5 drops to the minim. One drop spread by a pin or by the cork of the vial will easily cover a square inch of surface without spreading much further afterward, and in ordinary conditions of the healthy skin will be absorbed within a quarter of an hour, so that the dose may be repeated on the same place.

“A well-made fluid extract of aconite root, made by repercolation with alcohol alone from good root, is the best and only preparation needed. It is accurate and uniform, and easy to manage accurately in dosage, and is relatively the strongest of all the known forms in which the drug can be used. For these and many other reasons it should take the place of all the other preparations, and perhaps also that of all the aconitias.

“ Each parcel of it, as bought by the pharmacist or the physician, should be tested; and if one-tenth of a minim of it diluted with a fluid drachm of water, and held in the mouth for one minute, does not give the aconite impression within ten minutes, the parcel should be rejected, or its strength should be obtained, and doses increased accordingly. That is, if double this quantity in the same dilution should be required to give the slight but distinct impression, then the dose should be doubled. This fluid extract, when of good quality, is an exceedingly potent preparation, and should be used with extreme caution. Dose, 1 minim, freely diluted so as to avoid too strong an impression upon the fauces.”—(*Amer. Pract.*, Nov., 1882.)

In another communication Dr. Squibb states that the relative strengths of four samples of alkaloids compared by him with a standard solution were as follows:—Aconitia of unknown maker, 1; Merck's aconitine, 8; Merck's pseudaconitine, 83; Duquesnel's aconitine, 111. He further remarks that the last-mentioned produces a very different impression on the mouth from that of either of the other aconitias and from that of the root of *A. napellus*, causing in a greater degree the tingling element, which commences almost immediately, while that of pseudaconitine is delayed from five to ten minutes. It also diminishes rapidly, which is not the case with pseudaconitine.

In connexion with this subject Mr. E. M. Holmes makes some interesting and suggestive remarks in the *Pharm. Journal*, 16th Sept., 1882.

The chief difficulty in providing a preparation of aconite perfectly reliable and as nearly as possible of uniform strength is in obtaining the typical variety of the right species.

De Candolle describes twenty-nine varieties of the official species, *Aconitum Napellus*, but whether all these forms, which possess the same specific botanical characters in common, have the same chemical constituents, and whether, like isomorphic crystals and isomeric bodies in general, they have a different physiological action, is very difficult to ascertain, seeing that it is by no means easy to identify them, for the following reasons:—First, because a complete series of the members of the genus is hardly to be found for reference in any botanical garden or museum; secondly, because the varieties sold by florists are not always carefully named; and, thirdly, because they cannot be procured in sufficient quantity for purposes of chemical investigation. Professor Maximowicz, who has paid considerable

attention to the species occurring in Japan, remarks in a recent letter—"The genus *Aconitum* is, botanically speaking, a most difficult one, not one characteristic holding its own from species to species. It is a matter of personal opinion, whether you accept a dozen species in all, while another thinks to separate thrice the number. I have observed them in Mandshuria and Japan very assiduously and have despaired of finding well-defined species, for there will arise immediate forms between such as in most cases are thoroughly different. One would think these were numerous hybrids, but they are as freely seed-bearing as the various hybrid aquilegias used to be."

Although it is almost impossible to define accurately in botanical terms the different aconites, it seemed worthy of inquiry whether those available for pharmaceutical purposes might not be characterised sufficiently for all practical purposes. It is well known that the Japanese peppermint plant, although botanically it offers no character to separate it from *Mentha sativa*, is readily distinguishable by taste, and it is, therefore, natural to suppose that the different forms of aconite might be distinguished to a certain extent in the same way. Experimenting in this direction Mr. Holmes found that the roots of several species of aconite did not cause a tingling sensation when chewed, and that this was the case not merely with the Asiatic species, *Aconitum uncinatum*, *heterophyllum*, and *palmatum*, but that also several plants which present the specific characters of *A. Napellus*, although easily distinguishable from it by habit, present the same peculiarity. Of these it may be mentioned that forms which were supplied under the names of *A. Napellus*, var. *pyramidale* and *paniculatum*, &c., did not cause tingling, when chewed, while others, such as *Stroeckeanum* and *albiflorum*, produced a slight, and others again, such as *A. autumnale*, a very powerful tingling sensation. Here a difficulty is met with in the fact that the plants are not always correctly named, either in botanical gardens or in the collections of florists, from labels becoming displaced. But all of the aconites in which this variation occurs, so far as observed, flower later than the typical *A. Napellus*, so that if the Pharmacopœia added to its description "the root obtained from plants flowering in May and June," and erased the words "imported from Germany," one cause of the unequal quality of the root would be removed. This is all the more important since Mr. Holmes determined by direct inquiry that some florists would supply to a grower the plant flowering in May and June, and others would

supply any variety of *A. Napellus* that happened to be in stock, no difference in the properties of the varieties being known to them. The only way to secure aconite of good and uniform quality appears to be to limit the official drug to home-grown aconite flowering in May and June, and gathered when the plant is in flower. In this way there can be no mistake about the species, and the leaves collected at the same time could be used for making an extract. Even if the root were thus not gathered in its most active condition, it would at all events have the advantage of uniformity of strength, which is of much more importance.

The aconite has the property of developing roots instead of leaf-buds in the axils of the lower leaves, provided that these are covered with soil. Whether this property has been conferred on the plant with the view of enabling it to approach nearer to the surface when, as must often happen in its native mountains, the plant becomes almost buried by the fall of *debris*, or the earth washed away from the root by floods, or to propagate the species when not under favourable conditions for producing seed, it could at all events be turned to account in cultivation, since by earthing up the stems a larger yield of roots would probably be ensured.

In conclusion, aconite is very easy of cultivation, and considering the small quantity used there is no reason why any chemist who has a small piece of garden should not grow his own aconite root.

ALARMING SYMPTOMS RESULTING FROM EIGHT GRAINS OF POTASSIUM IODIDE.

While a few cases have been reported by Dr. J. R. Weist, of dangerous symptoms following the administration of medicinal doses of potassium iodide, the number is not so large as to make the following case of no interest:—

Miss K., a well-developed unmarried woman, twenty-eight years of age, consulted me because of a swelling of the right parotid gland. The enlargement was small. On discovering a slight scaly eruption on the scalp, I ordered a mixture containing eight grains of potassium iodide in each dose; the mixture was composed of the iodide, syrup and water. One dose of the medicine was taken at 8 p.m. In less than an hour disagreeable symptoms appeared about the mouth and throat; these increased in severity and new ones were added. At 11 o'clock, three hours after the medicine was taken, I saw the patient; found the symptoms alarming; the pulse was 60, and full; the axillary temperature 95° ; face pale;

slight œdema present over nearly the entire body. The face was markedly œdematous, especially the upper eyelids, which were so swollen as to render opening the eyes impossible. There was an abundant secretion of viscid saliva, from which the mouth was cleared with great difficulty. The mucous membrane of the nose was so swollen as to make it impossible to force air through the nasal passages. The lips, tongue, uvula, and soft palate were all greatly enlarged. There was nausea but no vomiting, and much pain throughout the entire abdomen. Respiration was greatly embarrassed, apparently because of œdema of the laryngo-tracheal mucous membrane. The patient would every minute start up in bed, toss the arms wildly about in her struggle for breath. The articulation was so impaired that it was with difficulty she made herself understood. The hypodermic use of $\frac{1}{4}$ grain morph. sulph. greatly relieved the respiration. The hypodermic injection was repeated in three hours, and the symptoms of poisoning gradually disappeared, although at the end of twenty hours after taking the iodide, there was still great suffering, the eyelids presenting a greater swelling than I ever witnessed. In seventy-two hours all the apparent effects of the medicine had disappeared. As a matter of experiment I gave this patient, one week after her recovery, *one grain* potassium iodide, and in two hours all the symptoms recorded above, but in a much less degree, were present. These disappeared within twelve hours. A quantity but little greater than the dose first prescribed of the medicine would have, I believe, destroyed the patient.—(*Amer. Practitioner*, Oct., 1882.)

REMOVAL OF WARTS.

Dr. Unna, of Hamburg (*Monatschrift prakt. Dermat.*, 3, 1882), had a young girl under his charge, in whom the dorsal surfaces of both hands were the seat of over a hundred warts, more daily making their appearance. He made on gauze tissue a plaster mass, which contained 10·0 grm. arsenic and 5·0 grm. of mercury. This was kept on during day and night. Two weeks later all the warts had disappeared and the healthy skin was seen. The cure here is not established by necrosis and dropping off of the excrescences, but like nature's spontaneous cure, by resorption.

We ourselves used to make cauterisation our main treatment for the removal of condylomata. A year ago a patient came to us, who, besides suffering from icterus, due to catarrhal inflammation of the bile-ducts, was affected with condylomata also. As the latter

were very large, preventing the prepuce from being drawn forward, their removal was desirable. They gave rise to an annoying itching and to a foetid odour. Not wishing to operate on them while the patient still had the jaundice, we told him to dust the parts daily with—

℞. Hydrarg. muriat. mit., 3j
 Acid. borac. pulver., gr. 10. M.
 Fiat pulvis,

and were not a little astonished to find three weeks later not a sign of them left. They were all absorbed. Since then we have often had occasion to use this powder, and invariably with the same good success.—(*Med. & Surg. Rep.*, Nov., 1882.)

THE TREATMENT OF DETACHMENT OF THE RETINA BY NITRATE OF PILOCARPINE.

THE brilliant results which have been attained by the subcutaneous injection of pilocarpine in the treatment of detachment of the retina, are immensely suggestive in respect of the application of this agent for the removal of inflammatory exudations. The strength of the solution employed is one-twentieth, and the dose of each injection is about one-sixth of a grain. The following plan has been found most efficacious:—The injections, of the strength above mentioned, are administered in series of ten to fifteen; then a period of repose follows, lasting about eight or ten days, when the injections are resumed again, if necessary. They are usually given in the morning, about two hours after the meal, and inserted at any indifferent point. The processes which thus go on under our eyes furnish us, in miniature, with a picture of the changes which ensue at any point, the seat of inflammatory exudation. If pilocarpine, when given subcutaneously, at a remote point, can cause the absorption of new material in the eye, will it not accomplish the same results in other tissues? There is here a profitable suggestion. As when exudations occur, the utility of remedies employed against the congestive stage of the inflammatory process ceases, it is, in a high degree, important to be possessed of a remedy which may cause the disintegration and absorption of the new formations. Pilocarpine seems to have this power. Unfortunately, it is so depressing to the vascular system that its use in sufficient quantity is not without danger. It has been used with success to remove pleural exudations, and it may have in the future wider applications in this direction, as we learn how to obviate its depressing effects.—*Med. News*, Feb. 24.

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. BANKS, M.D.
General Secretary—W. THOMSON, M.D.

SUB-SECTION OF ANATOMY AND PHYSIOLOGY.

President—ALEXANDER MACALISTER, M.D., F.R.S.
Sub-Sectional Secretary—JOHN FREEMAN KNOTT, F.R.C.S.I.

Thursday, February 1, 1883.

The PRESIDENT in the Chair.

Exhibition of Specimens.

DR. D. J. CUNNINGHAM exhibited frozen sections of various parts of the human body. DR. P. S. ABRAHAM exhibited—(1) a specimen illustrative of the occurrence of two superior venæ cavæ in the human subject, and (2) sections of certain tissues in lower animals. MR. J. F. KNOTT exhibited—(1) sections of human hair follicles, demonstrating the connexion of Henle's and Huxley's sheaths; (2) frog's nerve, showing Lautermann's notches; and (3) termination of nerve in frog's muscle, showing Bremer's "End-dolde."

The President's Address.

DR. MACALISTER delivered an Address on the history of anatomical research in Ireland. Beginning with the ancient Irish medical literature of the thirteenth and fourteenth centuries, whose anatomical knowledge is borrowed from classical sources, he sketched the progress of teaching and of investigation, touching on the researches of Mullen, Molyneux, O'Halloran, in the seventeenth and eighteenth centuries, and those of Macartney, Colles, and their successors, in the present century.

The Refractory Period of the Auricle of the Heart.

DR. PURSER gave the results of some new experiments which he had made on local electrical stimulation of the different portions of the frog's heart. It was found that, for the sinus, the auricle, and the ventricle, the law held good that each of these parts is insensible or refractory to single induction shocks during its systole, while, if stimulated during its diastole, it responded by an extra contraction, followed, in the case of the sinus, by a contraction of the auricle and ventricle; in that of the auricle, by the contraction of the ventricle. Some observations were made on the circumstances which influence the rapidity with which the contraction of the ventricle follows that of the auricle.

DR. THORNLEY STOKER called attention to the extreme practical importance of Dr. Purser's results in explaining how the murmur of mitral stenosis may be sometimes pre-systolic and sometimes post-diastolic—a fact which, so far as he knew, had up to the present remained imperfectly explained.

The Sub-Section adjourned.

SURGICAL SECTION.

President—JOHN KELLOCK BARTON, M.D., President R.C.S.I.

Sectional Secretary—WILLIAM STOKES, F.R.C.S.I.

Friday, February 9, 1883.

The PRESIDENT in the Chair.

Living Specimens.

DR. J. HAWTREY BENSON—A case of diffuse hypertrophy of the breasts.

MR. STOKES—Ununited fracture of humerus treated by resection and metallic suture.

MR. CROLY—Cases of (1) excision of shoulder; (2) excision of wrist; (3) excision of elbow; (4) excision of knee; (5) double hare lip without cleft palate.

MR. WHEELER—Cases of (1) excision of knee; (2) excision of elbow.

MR. KENDAL FRANKS—Case of excision of the elbow.

Specimens Exhibited by Card.

MR. PORTER—Cast of large ilio-femoral aneurism successfully treated by pressure.

MR. THORNLEY STOKER—Cast of compound dislocation of ankle requiring amputation.

MR. WHEELER—(1) Portions of tibia, femur, and patella removed from living specimen present; (2) portions of ulna, radius, and humerus removed from living specimen present; (3) head of humerus excised for carious disease.

MR. THOMSON—(1) Large fatty tumour removed from the arm; (2) nasal polypus removed by lateral section of the nose; (3) parts removed in excision of the knee.

MR. CROLY—Casts of rectangular flap amputation (Teale) of thigh, leg, and arm; Syme's and Chopart's amputation of foot.

MR. KENDAL FRANKS—(1) Sarcoma of the foot; (2) mammary tumour; (3) portions of humerus, ulna, and radius removed by excision.

MR. STOKES—(1) Greater portion of lower jaw removed by excision for epithelioma; (2) photograph of patient after operation; (3) photograph of case of ununited fracture of the humerus.

Communications.—1. *Ligature of the Subclavian Artery.*

DR. T. E. LITTLE read a paper on a case of axillary aneurism, for the cure of which he had deligated the subclavian artery in its third stage. The tumour had a traumatic origin. Great difficulties surrounded the diagnosis of the case, owing to the almost complete absence of pulsation or bruit in the tumour, nor could pulsation be felt at the wrist. There was a division of opinion among the surgeons who had been asked to examine the case, but ultimately the diagnosis of aneurism was arrived at. The operation selected and performed by Dr. Little was ligature of the third stage of the subclavian, the vessel being reached by an infra-clavicular incision. The result of the operation was most satisfactory.

DR. BENNETT dwelt on the difficulties that attended the diagnosis in this case, being at one time of opinion that the tumour was of venous origin. He subsequently, however, modified this view. In deligating the first stage of the axillary artery he pointed out the advantages of keeping above and not below the cephalic vein.

MR. STOKES asked the author what were his reasons for selecting the infra-clavicular operation?—one which, in Mr. Stokes' experience, was much more difficult than the operation above the clavicle. He also mentioned that the probabilities of finding the artery healthy were greater when the distant operation was performed.

MR. PORTER considered the Academy indebted to Dr. Little for his excellent description of the operation. He believed the deligation of the first stage of the axillary artery was a more difficult operation than that of the third stage of the subclavian. He agreed with Dr. Bennett that the vein gave a great deal of trouble, as a rule, and that the surgeon must with great caution pass either the aneurismal needle or the probe between them.

MR. CROLY dwelt on the difficulty of the operation, mainly from the

great depth of the vessel. It had been suggested, in order to facilitate reaching the vessel, to saw across the clavicle. The collapse of the aneurism after the operation was not a favourable sign. The case appeared to have many features of resemblance to that of an aneurismal varix. The occurrence of pulsation in malignant tumours he also mentioned.

DR. LITTLE, in reply, observed that to give some colour to what Mr. Croly had said, it appeared to him that the pulsation in the vein at the time was intrinsic. He gave his reason for selecting the infra-clavicular operation, stating that the indications to keep away as far as possible from the aneurism were not specially great, as the aneurism had a traumatic origin. He agreed with Mr. Croly that the collapsing of the aneurism on the application of the ligature was an unfavourable sign.

2. *Strangulated Inguinal Hernia.*

MR. KILGARRIFF read notes of three cases of strangulated hernia which had been operated on by him. The first was remarkable from the nature of the contents of the hernial tumour, consisting of the cæcum and portion of the ascending colon, in the cæcum having a free meso-cæcum, and the protrusion having a complete sac. The second case was one of congenital hernia, and presented many features of interest. The spermatic cord had a diameter of three-quarters of an inch, and was slung by a distinct and free mesentery. Again, the rigid, inelastic, condition of the skin of the patient rendered the replacement of the testicle impossible, and necessitated castration. In the third case there was a double stricture, the external consisting of thickened intercolumnar bands, and the second at the deep abdominal ring. The results obtained in these three cases were satisfactory.

In the discussion which followed, MR. ORMSBY, DR. T. E. LITTLE, DR. H. FITZGIBBON, MR. CROLY, the PRESIDENT, and MR. STOKES, took part. They drew attention to the after-treatment in cases of strangulated hernia, to the frequent possibility of reducing hernia after opening the sac without division of the stricture, to the possible connexion of serous effusion in the sac and extreme tightness of the stricture, and to the desirability of making a high incision in the congenital form. MR. KILGARRIFF replied.

The Section adjourned.

OBSTETRICAL SECTION.

President—JOHN DENHAM, M.D.

Sectional Secretary—WILLIAM C. NEVILLE, M.D.

Friday, January 26, 1883.

The PRESIDENT in the Chair.

Exhibition of Specimens.

DR. ATTHILL showed a large subperitoneal fibroid which he had recently removed from a patient by abdominal section.

MR. ABRAHAM showed a specimen of ectopia of viscera in a foetal male cat of about five weeks. The heart, liver, stomach, and greater part of the intestines were quite extruded from the body cavity through a nearly central opening in the abdominal wall. A few membranous shreds could be traced from the margins of the opening over the viscera—no other abnormalities, and the membranes were nowhere adherent.

MR. ABRAHAM also showed an example of dichotomy in the left fore-leg of a sheep. The bones of the two fairly developed feet started from the carpus. They were sub-equal in length, but the outer one, probably the accessory, was the more slender of the two, and wanted also some of its flexor and extensor tendons. A common integument covered both feet as far as the metacarpo-phalangeal joints.

Communications.—Induction of Labour at the Fifth Month.

DR. W. J. SMYLY reported a case in which the induction of abortion at the fifth month was necessitated by hæmorrhage. He concurred in the opinions of Dr. Priestley, Ahlfeld, and others, that the indications for the induction of abortion, as distinguished from the induction of premature labour, had not been laid down with sufficient precision. He could not, however, agree with Schröder that the induction of abortion should never be necessitated in cases of hæmorrhage, nor did he believe that where this was prolonged abortion necessarily occurred spontaneously. The patient was a pluripara, and since the occurrence of a previous miscarriage had suffered from symptoms of endometritis. In the month of February last she again became pregnant, and for four and a half months subsequently she was subject to frequently recurring hæmorrhages, which at last became so frequent and so profuse as to necessitate the emptying of the uterus. Labour was accordingly provoked by the introduction of a sponge-tent, and accelerated by Barnes' dilators. The ovum presented a peculiar appearance, owing to the enormously hypertrophied decidua, the result probably of the endometritis. The foetus was of a size cor-

responding to the period of pregnancy, and showed signs of commencing decomposition. A large quantity of firm, laminated clots preceded and followed the expulsion of the ovum. The patient died of septico-pyæmia on the thirty-second day after delivery.

Dr. MACAN said that the induction of abortion was clearly justifiable in certain cases. However, in cases of molar pregnancy, or of a certainly dead embryo, the term "procuring abortion" was scarcely a right one. Strictly speaking, the phrase was only applicable where the diagnosis was made that the foetus was living, and, if left alone, capable of going on to its full term.

Dr. NEVILLE agreed with Dr. Macan. Whenever excessive hæmorrhage threatened the mother's life in early pregnancy, the steps which should be taken to stop the bleeding were also those which would accelerate abortion. In the presence of great hæmorrhage such steps might be properly taken, even though the embryo could in no way be ascertained to be dead. Dr. Smyly's case did not seem to him one to which "induction of abortion" was applicable. It was rather one of a threatened abortion, in which the amount of bleeding rendered accelerative measures advisable.

Dr. MACSWINEY thought that in Dr. Smyly's patient conservative measures had been too long persisted in to the detriment of the mother. Abortion might justifiably have been sooner hastened.

Dr. A. HENRY said that in this class of cases expulsion of the ovum should be expedited with the view to stopping dangerous hæmorrhage, and preventing an opportunity for auto-infection.

Dr. SMYLY, in reply, said that the case cited in his paper was not one of a molar pregnancy. Decomposition having only commenced in the foetus, it could only have been dead for two or three days. Had abortion been brought on any sooner, the foetus might have been born alive. He still thought that the nature of the case justified the title of his paper.

On the Connexion between Ocular Diseases and Affections of the Female Generative Organs.

Dr. C. E. FITZGERALD read a paper on the above subject. The author was desirous of directing attention to a remarkable paper by Dr. Mooren, of Düsseldorf, which had lately appeared in the Archives of Ophthalmology, and was entitled "Disturbances of Vision and Uterine Disease." The predisposition of women to disease of the cornea, iris, chorioid, retina, &c., was shown in a very marked manner from the statistics of Dr. Mooren's Clinic—where 32½ per cent. were male, and 67 per cent. female patients. Dr. FitzGerald then referred to some of the most important points in the paper, and related three cases which had come under his own observation, and which were, in his opinion, to

be distinctly traced to affections of the genital organs. In the first case masturbation had been practised for a considerable time, and in the second the evidence of the existence of this vice, short of the patient's confession, was quite convincing. In the third case, one of the most intense optic neuritis, there was reason to believe that the latter was due to a sudden cessation of menstruation. The subject of masturbation was an unpleasant one, but ought boldly to be faced. He thought that the vice was more frequent among women than was generally supposed, and he was anxious to obtain the views of the members of the Obstetrical Section of the Academy on this question.

The PRESIDENT said he had lately under his care a child, only eight years old, who, he had no doubt, masturbated. She had never menstruated, and suffered from organic brain disease. One question was, whether the practice was not sometimes induced by some derangement of the general health affecting the brain.

DR. MACAN remarked that the question of masturbation was a most difficult one. Without the patient's own confession they could not be absolutely sure about it, but there might be evidence sufficient for a moral belief. The symptoms which he looked on as signs of masturbation in an unmarried woman were flabbiness of the vulvæ, great relaxation of the parts, and the possibility of palpating the ovaries. He had in such cases palpated them with as much ease as in a woman who had had half a dozen children. Besides, there were the ravenous appetite, the muddy complexion, and the entire moral aspect of the woman, which proclaimed the Onanist. It was necessary to get a confession from the woman, because treatment was powerless until they were able to tell her that the injurious practice must be stopped. He was not prepared to make a local examination of the generative organs of an unmarried woman on account of eye symptoms alone, and without more special evidence of a local disease calling for examination.

DR. HENRY KENNEDY said that, in his experience, masturbation among females was very general, but he had not found much difficulty in getting them to admit it. He had rather found that both males and females who were addicted to the practice would admit it if properly asked. The question of connexion between such practices and diseases of the eye was a very difficult one. The combined knowledge of oculists and gynæcologists might determine the question. The immediate effects of the practice were confined to the external parts, and no disease, in the proper sense of the term, was set up in the vagina, or in the uterus. The more remote effects were not confined to the eye alone. The disease *petit mal* had directly resulted from the habit in both men and women. He had cured *petit mal* in both sexes by insisting on the practice being given up. Amongst the signs were drooping of the eyelids, dilatation of the pupils, and complaints of loss of vision; and inquiries then generally

elicited the fact that the practice was resorted to. He did not think that inspection of the vulvæ would make it certain that the habit existed. He had not known hypertrophy of the parts to result from the practice.

DR. MACSWINEY was sceptical as to the general prevalence of masturbation on the part of young girls. There should be the utmost caution before entertaining a question of the sort respecting a young girl brought to a medical man for advice. Downcast eyes, and large pupils, and muddy faces, were not sufficient to justify the conclusion that an examination should be made. He thought the question with respect to that practice was whether it was a disease of the uterus or genital organs. It might go on for years without any visible signs of the sexual organs at all. Did boys who masturbated suffer from analogous ocular affections?

MR. ARTHUR BENSON said it was difficult to understand how so many eye affections as had been mentioned could be produced by one common cause, and it seemed more reasonable to suppose that both the masturbation and the ocular affections were in common the results of some nervous disease. They knew that a very large number of lunatics had been found to practise masturbation.

MR. SWANZY said there were other irritations of the sexual organs besides the one mentioned which gave rise in females to diseases of the eye. In the end they might find that both the masturbation and the ocular affections were the result of one and the same cause—namely, an affection of the base of the brain. He had seen a patient in whom the menopause, combined with mental excitement, had appeared to him to determine an attack of optic neuritis terminating in atrophy. In this case the cessation of the catamenia had appeared to act deleteriously, converting what had been previously an habitual congestion into an inflammation. Five years ago he read before the Obstetrical Society a paper in which he tried to show that in young girls of from eleven to fifteen years of age cases of iritis occurred, that disease being very rare in such subjects, except in cases of inherited syphilis. He had never seen a case of iritis at that time of life in a boy, and he could hardly believe that those cases of iritis were not due to some disorder of the generative system. Another very remarkable condition was hysterical amblyopia, resulting from disorder of the uterus. There was a peculiar form of it which occurred in young girls, presenting no ophthalmoscopic signs, but in which central vision was very much decreased, and there was great contraction of the field of vision. He had under his care a case of that kind connected with the tardy appearance of the menses. The patient first came under his care, aged seventeen, the menses not having then appeared, and her vision being much affected. In six months' time the eye symptoms were relieved. Lately, her age being nineteen, her first catamenia appeared, and she was then attacked with low vision and

contracted field of vision, and now, after a fortnight or three weeks, she had quite recovered.

MR. STORY said his impression was that nothing definite had been proved in this matter. That there was a connexion between the uterus and the eye was true, just as there was connexion between the uterus and every other organ; but that there was any peculiar or special connexion he did not believe. It was proved, however, that disordered menstruation had an effect on the phenomena of vision, but besides anomalies of vision it produced disorders in other portions of the system. He had never seen a case of hysterical amblyopia. He did not disbelieve in the affection, but he did not believe that it occurred without there being a definite physical cause for it. He could understand absolute loss of vision being produced by hæmorrhage upon some portion of the optic nerve behind the eye-ball, which might afterwards be absorbed, and vision restored. The proofs given in the paper of Dr. Mooren, which Dr. FitzGerald had made the basis of his paper, seemed to be unsatisfactory as regarded the alleged connexion between affections of the uterus and affections of the eye. The process of causation assigned for the production of the affection of the eyes seemed most elaborate and far-fetched, and many of the cases quoted, when critically examined, failed to support his contention of cause and effect.

DR. DOYLE had been startled by the statement in the paper as to the frequency of masturbation among females. He did not believe the connexion between masturbation and eye affections to be made out on the evidence adduced.

DR. NEVILLE objected to masturbation being regarded as a disease of the generative system. It was very often a vice, while in other cases it was symptomatic of disease rather than a disease in itself. Sometimes it originated in a local source of irritation, such as acrid discharges from the genital organs, or in boys with a long prepuce, while sometimes it was due to distinct or latent nervous diseases. Thus masturbation was associated with epilepsy and insanity—not in a causal relation, but an individual symptom of the nervous disorder. It, no doubt, was often an early or premonitory symptom in such cases. Eye affections, such as atrophy of the optic nerve, were naturally here to be looked on as symptomatic also. It must not be forgotten that the apparent connexion between affections of the generative system and of the eye might merely be coincidences. To prove the causal relation of the former, it must be shown that they preceded the affections of the eye, that the menstrual morbidities influenced the course of the eye affection, and also that their cure was essential as a part of the treatment of the latter. It was certain that disease of the generative organs with disordered menstruation would react on the eye as on the rest of the system, but this reaction was not to be confounded with causation.

DR. FITZGERALD replied, contending that Dr. Mooren's proofs in the form of cases had not been fully represented in the American translation. In the original German they were more full and convincing. The whole question was a suggestive one, and worth more extended study. But he had not meant to imply that there was any special eye disease set up by disease of the uterus or ovaries. He believed that masturbation induced eye disease in boys just as well as in girls.

The Section then adjourned.

PATHOLOGICAL SECTION.

President—J. M. PURSER, M.D.

Sectional Secretary—E. H. BENNETT, M.D.

Friday, March 2, 1883.

The PRESIDENT in the Chair.

Specimens Exhibited by Card.

DR. QUINLAN—(1) *Bacillus anthracis* in blood; (2) *bacillus anthracis* in lung tissue. DR. TWEEDY—Brain from a case of acute hydrocephalus, with microscopic sections. DR. WARREN—Recurrent fibro-myxoma. DR. DUFFEY—Secondary carcinoma of the liver, with microscopic sections. DR. R. M'DONNELL—Scirrhus of the male breast, with microscopic mountings, from a patient, aged twenty-nine.

Papers.—1. Notes on Blood-vessels of New Growths.

MR. P. S. ABRAHAM read notes on the blood-vessels of new growths, with especial reference to their origin in granulation tissue. The blood-vessels which are seen in sections of tumours may be considered under two heads—(1) those belonging to the proper tissue of the part into which the neoplasm has infiltrated; and (2) those which have arisen anew and belong to the new growth itself. The former have become enveloped by the new invading tissue, which they afterwards, in greater or less part, supply. The latter are the vessels of circumscribed growth, and are either prolongations or sproutings from the vessels of the neighbouring tissue, or, formed apart, have been subsequently connected with them. The small arteries and veins which come under the first category are often distinctly modified by what appear to be inflammatory changes, and the proliferation of the cells of the coats may go on to such an extent in the case of the intestine that the lumen may become occluded. An extreme case of the vascular wall thickened and studded with an

irregular cell-growth is seen in certain sections of leprous tumour. The young blood-vessels of neoplasms in general do not always show any distinction of tunics, and sometimes in a quickly growing mass of cells the wall of the vascular channels can scarcely be differentiated from the surrounding cell tissue. From the consideration of the sections of granulation tissue, which had formed in sponges placed for various periods in wounds, and on theoretical grounds, it seems unlikely that Prof. Hamilton's new and ingenious mechanical theory of the formation of granulation vessels will be altogether accepted. In the specimens shown the vessels branch freely and inosculate among the fibres of the sponge, they give off shoots of different sizes, and there is abundant evidence of a new formation of capillaries going on, much in the manner described by Arnold. Even if the capillary blood pressure were sufficient to produce the mechanical effect of forcing out and elongating the capillary loops, it is difficult to understand how that pressure could cause the cell-multiplication which goes on in the wall of the elongating capillary. The cells of the wall, indeed, are not simply stretched, they increase in number by division and the wall of the capillary grows.

Several other arguments were brought forward; and, in conclusion, it was remarked that, as Prof. Hamilton shows—a thrombus in a ligatured artery becomes vascular by the throwing in of granulation loops from the vasa vasorum near the point of ligature—in his own words, “it is nothing more than a granulating surface within a vessel.” If this be the case, the pushing in of the loops must be against an intra-arterial pressure certainly greater than that of the blood in the vasa.

2. Congenital Defect of the Rectum.

Dr. E. H. BENNETT read a paper on congenital defects of the rectum, based on the details of a case which he had treated during the winter by laparotomy, failing to reach the bowel by the perinæum. The variety of deformity exhibited was that in which the anus and other pelvic organs, except the rectum, were normal, and there exists a cord of variable length connecting the anal *cul de sac* with the extremity of the intestine. With the specimen recently acquired Dr. Bennett showed three examples of the same deformity contained in the Museum of the Royal College of Surgeons, and contrasted these with an example of complete defect of the anus and urino-genitary outlet contained in the Museum of the School of Physic, Trinity College. Having directed attention to the view of Giraldés and of Curling, who have attributed this deformity to obliteration of the rectum by a pathological process, Dr. Bennett showed from the evidence presented by the specimens that this view was erroneous, and that the lesion is due to the arrest of development of the bowel, the hypoblastic pouch failing to reach the anal inflection from the surface of the embryo. He indicated the probable analogy between

the muscular cord connecting these parts and such bodies as the gubernaculum testis. He further demonstrated that attention to the position and relation of the cord might enable the surgeon when operating for relief of the deformity to avail himself of it as a guide to the intestine.

DR. MACSWINEY, MR. STOKES, and PROF. MACALISTER discussed the foregoing communication.

3. *Obstruction of the Inferior Vena Cava.*

DR. F. W. WARREN read a paper on the subject of occlusion of the inferior vena cava, illustrating his remarks with a rare case, in which the inferior cava was completely occluded by a calcareous tumour about the size of a bean growing by a narrow pedicle from the great Eustachian valve. The tumour completely obstructed the vein at the caval opening of the diaphragm, and was adherent to the living membrane of the vein. The specimen was taken from the body of a male aged twenty-two years. During life both lower limbs, the front of the abdomen, and the anterior aspect of the thorax were covered with a close network of varicose veins—the head, neck, and upper extremities being perfectly normal in appearance. The patient stated he had these enlarged veins as long as he could remember. He was otherwise perfectly healthy, there being no œdema, no hæmorrhoids, no albuminuria; but he died unexpectedly of enteric fever from perforative peritonitis, and he suffered from œdema of the lungs from the outset of the fever. A careful *post-mortem* examination having been made, the principal channels of collateral circulation were as follow:—The vena azygos major took the place of the occluded cava, and was about the size of the latter vein in health. The superficial compensatory circulation was principally carried on by the superficial deep epigastric veins, with the circumflex ilii veins from below anastomosing with the internal mammary and long thoracic veins from above; the course of the blood-current being reversed, and passing from below upwards. Within the cava, just as it opened into the right auricle, the tumour already described was discerned. The venæ cavæ hepaticæ were not obstructed, as a surgical probe could be passed through them into the right auricle. Dr. Warren was of opinion that the tumour commenced as a fibrinous vegetation upon the great Eustachian valve, and then underwent calcareous degeneration, causing very gradual and finally complete obstruction of the cava. Upon striking the tumour with a pencil or spatula its stony and calcareous character was readily demonstrated. The tumour did not in any way partake of the character of a thrombus, as it was round, small, isolated, and attached by a narrow pedicle to the valve. Dr. Warren was also of opinion that the tumour was intra-venous altogether in its origin and development.

DR. MACALISTER, commenting on the paper, stated that the total

number of cases recorded of obliteration or absence of the inferior cava was probably about twenty-three.

DRS. H. KENNEDY and BENNETT also commented on the paper.

DR. WARREN replied, and

The Section adjourned.

MEDICAL SECTION.

President—WILLIAM MOORE, M.D., President K.Q.C.P.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, March 16, 1883.

The PRESIDENT in the Chair.

Living Specimens.

DR. M'DONNELL exhibited a case of Hammer Cramp; and DR. STORY a case of Hæmatrophia Facialis.

Specimens Exhibited by Card.

DR. C. J. NIXON, Intussusception of the Death Struggle; DR. J. W. MOORE, Disease of the Aortic Valves, with Compensatory Mitral Regurgitation; DR. HAWTREY BENSON, Abscess in Wall of Bladder which pointed externally.

Communications.—1. “*Bleeders*” and Sudden Death from Cerebral Hæmorrhage; 2. *Hammer Cramp*.

1. DR. FRAZER read a paper mentioning some instances of serious bleeding following trifling injuries, and then described two cases of sudden death from sanguineous apoplexy occurring in individuals who had previously suffered from bleeding of the nose, lungs, &c.

DR. HENRY KENNEDY related a fatal case of purpura, in which the *post mortem* examination revealed an extensive effusion of blood over the surface of the brain; and he referred to Latour's observations on hæmorrhage.

Dr. COX referred to a gentleman the subject of hæmorrhagic diathesis, in which a chill appeared to be invariably the exciting cause of the hæmorrhage. In this case there was a well-marked family history of the diathesis.

The PRESIDENT mentioned a case of an old lady who suffered from severe epistaxis, and shortly afterwards became completely demented.

DR. FRAZER, in reply, said he introduced the first two cases merely to show that he was not overlooking the subject of hæmorrhagic diathesis.

In such cases the blood was almost water, but in the case of the gentleman pointedly alluded to, he never saw better clotting blood. The hæmorrhage in his case was not produced by chill, but he appeared to form more blood than was required, and this was eliminated by nose, lungs, or kidneys.

2. DR. R. M'DONNELL showed to the Section a patient, a young man, twenty-two years of age, whose right arm was subject to muscular spasms. The patient was a nailor by trade, and had been since he was eleven years old more or less hard at work at this occupation. The spasmodic jerkings of the muscles, which interfered with his occupation, began about seventeen months ago, and after the first three months became so violent that he had to give up work altogether. The case was one of functional spasm unaccompanied by pain, and is an affection very similar to writer's or scrivener's cramp, although all the muscles supplied by the brachial plexus seem to be affected, and those around the shoulder-joint, especially the great pectoral, seem to be most so. The treatment consists in regular, orderly, and rhythmical movements of the limb, as was so successful in a very similar case reported by Dr. G. V. Poore in the *Practitioner*, Sept., 1872.

DR. FOOT said that this man had been under his care for a considerable period, during which time there was a marked improvement in his symptoms. He did not consider it at all a wonderful case. He thought it was analogous to other cases, such as telegraphists, milkers, violin and pianoforte players. He was not aware that it differed from several cases recorded by Dr. Frank Smith of Birmingham, which was a centre of nail-making. He never thought there was any approach to chorea, as when in bed the muscles were perfectly quiet.

DR. HENRY KENNEDY remarked that Dr. Harley had succeeded in curing similar cases by large doses of succus conii— $\frac{3}{4}$ ii. at a single dose.

The PRESIDENT and DR. C. F. MOORE having also taken part in the discussion,

DR. M'DONNELL replied. He said that there were two points raised by Dr. Foot in reference to the case. First, there was no difference of opinion as to the nature of the case, which belonged to the category of scriveners' palsy, but differed from the tremor in the piano players, &c. His case also differed from those of Dr. Frank Smith, in not having general paralysis. Dr. Smith's cases bore no relation whatever to scriveners' cramp or hammer cramp. The second point was that Dr. Foot did not seem to think that the case was related to chorea, because the patient was quiet at night. But so far as his (Dr. M'Donnell's) experience went, in any, except the most exaggerated, case of chorea the movements were entirely stopped during sleep.

The Section then adjourned.

CLINICAL LECTURES ON DISEASES OF THE LOWER BOWEL.

By EDWARD HAMILTON, F.R.C.S.I.; Surgeon to Steevens' Hospital.

LECTURE III.

IN this lecture we shall consider fissures and ulcers of the rectum. The first claim our special attention, as they possess peculiar interest, inasmuch as no disease is so amenable to well-directed surgical treatment.

A fissure of the rectum, although the local lesion appears so trifling, gives rise to more intense suffering than any other affection occurring in this locality—in fact, so pronounced is this pain, and so remarkable in its character, that it has been the source of much perplexity, and its cause is still a disputed point in surgical pathology.

Blaudin and Dupuytren classified fissures of the rectum into those *below, opposite to, and above* the sphincter. Those which occur below the muscle are comparatively unimportant superficial tears or cracks in the muco-cutaneous membrane at the verge, and may be the result of pruritus or prurigo, or of straining to pass a large costive motion. If the patient's health is good, they heal quickly, and give rise to little pain or trouble.

Those above the sphincter present more the characters of ordinary ulcer of the rectum.

Those which are placed on the sphincter constitute the true fissure of Boyer—sphincteric fissure. The fibres of the muscle are laid bare by ulceration, and they form the immediate floor or base of the fissure. In form it is like a peg top, boat-shaped above; it narrows gradually to a mere groove at the anal verge. This shape explains the true nature of the affection; it is in reality an ulcer, and, when expanded, presents an open sore with a grayish or sometimes with a florid red colour, depressed surface, and circular outline, but the contraction of the bowel at the anus puckers its lower border into a groove or fissure. It is frequently described as the “irritable ulcer.”

The pain which indicates the existence of this disease is characterised by two remarkable features—the time at which it occurs, and its intensity. It does not manifest itself as we might *à priori* expect during the act of defecation, when the sore was being opened, and its surface put upon the strain. It does not, for the most part, set in until after an interval of half or a quarter of an hour, and it persists during a period varying from one to eight hours. It is a wearing, nagging pain of a most depressing kind, which frequently obliges the sufferer to lie down

after the bowels have been moved, and causes him to dread the operation, and leads him to defer it as long as possible. Thus constipation is engendered, and the distress increased tenfold. Instinct leads him to adopt a precaution which the surgeon frequently recommends—to have the action of the bowels, if possible, at night before the usual hour for retiring to bed. This peculiar pain is frequently attributed to neuralgia without local lesion. A knowledge of this fact is necessary to guard you against falling into the error, and will lead you to submit all such cases to a careful physical examination.

Temperament has much to say to the intensity of the suffering in different individuals—hence the classification proposed by M. Gosselin into “*tolérantes*” and “*intolérantes*.” We are naturally led to seek some explanation of a symptom so marked and so peculiar. Boyer attributes it to spasm of the sphincter—Van Buren to a fascicular spasm or cramp of the muscular fibres, induced by the local irritation of the ulcer. Quain compares it to the photophobia and spasm of strumous ophthalmia. Gosselin regards it as a true neurosis—neuralgic pain, and hence much influenced by idiosyncrasy. One cannot easily regard any of these explanations as satisfactory. It has often occurred to me that during the act of defecation a minute particle of fæcal matter becomes lodged in the fissure, and undergoing changes from atmospheric influence and decomposition, may act as a direct irritant to the surface of the ulcer. The condition of the sore, the nature of the discharge, and the situation of the fissure may account for the degrees in the severity of the pain. A slight streak of blood may stain the fæcal mass, and there may be a discharge of muco-purulent fluid.

Previous to the writings of the great French surgeon, Boyer, the treatment of fissure was empirical and unsatisfactory; lotions of various kinds, salves and unguents were employed, with doubtful success. The application of caustics offered better results. Boyer was impressed with the idea that spasm of the muscular floor of the fissure kept it from healing, and he adopted the practice of procuring a quiescent state of it by free division of the muscle through its entire substance. Should the disease occupy the mesian line he recommends such an incision on each side of it. A bougie was then introduced and lint packed round it so as to ensure healing by granulation. Copeland, Quain and other British surgeons regard this operation as unnecessarily severe, and have determined that division of those fibres of the sphincter which form the immediate base of the fissure is quite sufficient to enable it to heal. This limited operation is now the established method of treatment, and can be easily accomplished by the aid of a speculum.

The principle of paralysing the action of the sphincter has been carried out in another way without a cutting operation.

Racumiêr, in 1829, proposed to the Academy of Medicine at Paris

that the sphincter could be brought into a state of temporary paralysis by a rhythmic kneading of its fibres between the fingers inserted into the bowel and the thumbs on the outside, *massage cadencé*. This process, although tedious and painful, was attended with remarkable success, and promoted the healing of fissures and ulcers.

Maisonneuve, taking up the idea, adopted a more rapid, but also a much more painful, proceeding—one, indeed, which, without anæsthetics, may justly merit the opprobrium of “brutal” with which it has been stigmatised. He introduced the fingers consecutively through the anus until the entire hand had entered the bowel, it was then suddenly withdrawn, I need hardly say, with the effect of producing inertia of the muscular fibres for some considerable time, perhaps longer than was requisite for the healing of the fissure, or was desirable. This operation was subsequently modified and rendered much less formidable by using the fingers only and by causing anæsthesia.

Van Buren, from an extended experience of forcible dilatation, recommends it highly, not only in fissure, where he suggests it may have some of the effect of “nerve stretching” in neuralgia, but in all cases where it is desirable to procure a quiescent state of the sphincter for some time; hence he advocates it as a preliminary operation on hæmorrhoids.

Mr. Allingham always adopts it; and you must have seen that in this hospital we resort to it in all operations on the lower bowel. I believe it is not, as a rule, much practised in Dublin hospitals, probably from natural prejudice against the form in which it was first presented to the profession; but it seems to me to be sound in principle, and may be an absolute necessity in cases where cutting instruments are forbidden, either by the patient’s wish or by peculiarity of constitution. We adopt the following plan:—The thumbs are introduced one after another into the anal opening, while the palms of the hands are stretched out over the buttock of either side. The adequate dilatation of the sphincter requires the exercise of a much stronger muscular effort than you will be prepared for. Gradual expansion by the fingers day after day has occasionally succeeded, but cannot be commended.

Professor Joubert has advocated the complete excision of the walls of the fissure; but, as the dissection must be preceded by stretching the sphincter, the credit of the result cannot be indisputably claimed for the cutting operation. Fissure is a frequent complication of polypus, and is constantly found to intensify the sufferings of hæmorrhoids.

Syme alludes to a papilla which he has observed at the superficial termination of the fissure, an appearance also frequently present in fistula and ulcer. This disease is said by most authorities to be of more frequent occurrence in the female than the male, although, I think, I have seen as many of one as the other. No age is exempt; we find it in the infant at the breast and in its octogenarian grandmother.

The symptoms of ulcer of the rectum do not present the same pronounced character as those of true fissure; they correspond more with the “*fissures tolérantes*” of Gosselin—dull aching pain in the back, heat and smarting, increased by the act of defecation, more especially if the evacuations are firm in consistence, frequent desire for the act, particularly in the morning hours; in the intervals a discharge of mucopurulent matter which stains the dress, sometimes tinged with blood. The suffering is increased when this discharge is lessened, as if it facilitated the passage of the mass over the tender surface. On examining the part with the finger its point sinks into a cup-like depression, with its margin slightly raised and sometimes a little indurated. The pain may be severe if the ulcer approach the anal verge.

The ætiology of this disease is a matter of much practical interest. We should make a great mistake if we were to regard them as in all cases mere local affections; on the contrary, they are often caused by very serious morbid conditions of the entire system, such as scrofula, venereal, or cancer. Local causes no doubt give rise to many ulcers of the rectum. Forcible straining to evacuate a costive stool may cause a trifling tear of the mucous membrane, which, if the health be not robust, fails to cicatrise and degenerates into chronic disease. Solid matters which have resisted the solvent influence of the digestive fluids may scratch the membrane or lodge between its folds, and acting as an irritant produce ulceration. Foreign substances introduced into the rectum from below or the efforts to remove them when impacted may produce a similar result. The bowel may be bruised against the sacrum in tedious labour. Much stress has been laid on this as a frequent factor in causing ulceration of the bowel, and the stricture consequent on its cicatrisation as accounting for the greater frequency of the disease in females.

The rupture of a small vein or of an internal hæmorrhoid may be the starting-point. These local causes of ulcer of the rectum may all be regarded as “traumatic.”

Dysentery is well known to be a fruitful source of ulcerations, which, as a rule, heal and disappear with the subsidence of the irritation in the bowel, but occasionally such a spot will remain and degenerate into a chronic sore. It is a very interesting pathological fact that certain conditions of the system at large or of organs quite remote have a tendency to develop special forms of ulceration in the digestive canal—the ulcer of the stomach, so frequently associated with the anæmia of the chlorotic female; the ulcer of the duodenum to which Mr. Curling has drawn attention in its connexion with extensive implication of the skin in scalds and burns; the dothiententerite of typhoid fever; and no doubt there are others as yet unnoticed.

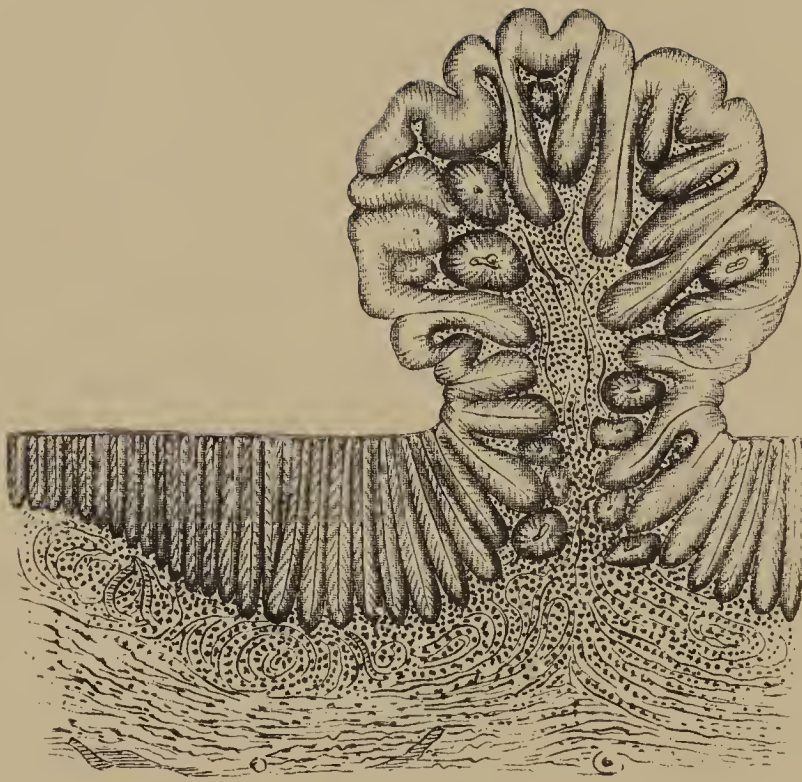
Some of those ulcers are supposed to depend on deposition of tubercle

in the intestinal wall. You are familiar with the change which this pathological element almost invariably undergoes of degeneration and softening. Such a spot may be the starting-point of the disease which we are considering, and whatever views we may hold respecting the existence of such a condition as a strumous or scrofulous diathesis, every practical surgeon knows that the peculiar state of the system to which this term has been applied is very unfavourable to the healing process. Again, a simple fissure may become inoculated with the discharge from a chancroid sore, especially in the female. This may extend into the rectum by a slow and gradual process, or where the constitution is impaired by intemperance, irregular habits, and want of food, it may become phagedænic and spread rapidly into the bowel.

True syphilis is very rare; it was once common enough in our convict settlements, but is not so now. Malignant disease as a cause of ulceration we will consider on a future occasion.

We have seen that the management of fissure can be carried to a successful issue by surgical operation alone—not so the chronic ulcer, in which it must be combined with medical and dietetic treatment. It is necessary to give the bowel as much rest and to keep the discharges as unirritating as possible, both in their nature and consistence. With this object the value of milk is recognised by all practical surgeons; it may be combined with rice, sago, tapioca, revalenta, and a variety of farinaceous food. Meat in small quantity and not over-cooked may be allowed once a day. Alcoholic stimulants are, as a rule, to be avoided. The patient should enjoy good air, as he must be limited as to exercise; he should not walk much, but rather recline, as the weight of the superimposed intestines maintains an injurious influence on the ulcer. For the same reason carriage exercise is to be avoided, as it almost always causes undue action of the bowels, and the shaking from side to side disturbs the diseased part. Boating may be enjoyed without prejudice. The tendency to frequent discharges should be controlled by bismuth or the acetate of lead and opium pill given at night.

A great many local applications have been in repute for the treatment of these ulcers. Dupuytren had great faith in an ointment composed of one drachm of acetate of lead, one drachm of extract of belladonna, and six drachms of prepared lard. Nitrate of silver, sulphate of copper, and sulphate of iron, have each had strong advocates. Should these topical applications fail the ulcer should be incised, for the double purpose of obtaining the stimulation of the knife and dividing the fibres of the sphincter and getting rid of one source of irritation by setting them at rest for a time. In order to do this effectually a gorget must be employed. It is most important to bear in mind that this ulcer is very liable to be mistaken for chronic dysentery or even diarrhœa. In this connexion we have to consider whether such a disease as painful spasm of the sphincter exists



250 diameters.

Vertical Section of Mucous Membrane bearing a Young Growth. The follicles of Lieberkuhn are seen, gradually increasing in size from left to right, until they extrude themselves in the form of a polypus, which is seen to consist of the enlarged and irregularly shaped follicles with their correspondingly enlarged lining of columnar epithelium. 1872. (Esmarch.)

as an essential condition, or is it always to be explained as a consequence of some other local lesion. Boyer, Dupuytren, and Brodie, have given a strong opinion that such a disease does exist, while, on the other hand, authorities which have quite as much weight are to be found in the opposite scale. I have no hesitation in stating that I have myself met with more than one individual, of highly nervous temperament and generally excitable, in whom this muscle has been the subject of spasm attended with severe pain, not as a permanent condition, but a transitory recurring cramp, causing much suffering and inconvenience. Often associated with irregularity of the bowels, it usually subsides under appropriate medical treatment, mild aperients, tonics, and the warm bath, and seldom demands the heroic measure proposed by Boyer—division of the sphincter.

POLYPUS OF THE RECTUM.

Your clinical observations must by this have taught you that mucous membranes are subject to simple outgrowths of their surface, which, from their elongated form and fancied resemblance to some of the hydrozoa, have been called polypi. You have seen them in the nose, ear, pharynx, and uterus; they are not so frequently met with in the rectum, and they bear a very small proportion, indeed, to the other diseases of the bowel—the majority of those which I have seen occurred in early childhood. The anatomical structure of these growths affords ground for classifying them under two heads:—

“*Adenoid*,” consisting of mucous membrane alone, with its gland elements or follicles enlarged and filled with columnar epithelium. The microscopic appearances in this form are well shown in the accompanying plate from Van Buren.

“*Fibrous*,” in which are found filaments of the submucous tissue; these are subdivided into hard and soft.

The hard fibrous polypus is comparatively rare, and is found usually in the adult. It is a true fibroma, and presents the tendency so usual within that form of growth to be extruded from the tissue in which it is developed. These growths vary in size, from a hazel nut to a plum, and do not usually attain large dimensions, as they are subject to the constant tendency to become detached by gradual narrowing of the pedicle, by straining at stool, as well as the tendency for such outgrowths to be thrown off by natural efforts. Esmarch gives an account of one which weighed four pounds.

The surface as a rule is smooth, or may present pit-like depressions resembling an enlarged tonsil. They may, however, assume a granulated or villous appearance, and pouring out blood may raise a suspicion as to their being malignant; and Rokitansky appears to hold that they frequently are so. Tumours of this kind have been described by different writers

under various names. The "*villous tumour*" of Curling belongs to this class. It is so called from its resemblance to a similar growth which has been rather frequently noticed in the urinary bladder. So likewise the villous polypus of Esmarch, the granular papilloma of Gosselin, and the bleeding tumour of Quain. There can be little doubt that they occupy the narrow border-land between perverted simple growths and the truly malignant deposits. They usually have a broader pedicle or base, and they demand free removal with cauterisation of the point of attachment and its immediate environs.

The soft variety may be rendered œdematous by deficient circulation through the pedicle; a glairy mucous fluid may be infiltrated into its tissue or deposited in imperfect cysts—"Myxoma;" in addition to the submucous filamentous tissue we have gland elements undergoing marked changes; their nutrition is impaired and their growth perverted; they become filled with a deposit like glue—"Colloid." So that in the histology of polypus we are drawn by insensible degrees from the simple normal tissues to those dreaded deposits which are so truly characterised as malignant.

As a rule we find a single polypus only, but Lebert records a case in which twenty polypi existed; and Richel speaks of having removed from sixty to a hundred—some as large as a cherry—from a male subject, twenty-one years of age. This case would seem to imply a villous degeneration of the entire mucous surface of the rectum. The symptoms of polypus are usually characteristic enough.

A child, running about in its usual health, discharges a few drops of blood, or some blood-stained mucus at each evacuation, and is observed to strain as if to get rid of something from the bowel. A small body is found to protrude and again recede within the anus; this presents a dark red colour. Such symptoms are usually attributed by nurses and mothers to "the body coming down," piles, dysentery, or worms. In all such cases a careful digital examination should be made. This proceeding should be carried out with all gentleness to avoid giving the child pain, and to guard against the danger of tearing the little tumour from its attachment—an accident which might be followed by troublesome bleeding. In the adult the symptoms are more easily confounded with those of ordinary hæmorrhoids. Here also we find polypus often co-existing with fissure, the presence of the tumour causing straining and a tendency to ulceration. The proper treatment is *ligature*, as evulsion, cutting, and torsion are liable to be followed by troublesome bleeding. In the child this might be attended with danger, and might be very difficult to control. After the action of the bowels, or, indeed, when the child cries during the examination, the polypus protrudes and may be fixed in an ordinary catch-forceps, and a ligature slipped up to the highest possible point of the pedicle. It usually becomes shrivelled,

and does not again appear through the anus, being discharged by stool after three or four days. Should the pedicle be very thick, it may be transfixed with a double ligature and each segment tied separately, as suggested by Mr. Syme.

Before we leave the subject of treatment it must never be forgotten that polypi are sometimes attached very high up the canal, as high as the sigmoid flexure of the colon; and, when traction is made upon it, the bowel may be drawn down and actually invaginated into the rectum, as in a case recorded with commendable candour by Broca in which this occurred, and the invaginated intestine was divided with an ecraseur, leaving a hole in the wall of the bowel, which was followed by fatal result. In all protrusions through the anus of large size the possibility of its containing a process of the intestine should ever be borne in mind. Mr. Fleming, our late Consulting Surgeon, has recorded some cases of polypus which produced so much sympathetic irritation of the bladder as to simulate stone in the child.

RHEUMATISM IN A CHILD.

IN an interesting case of acute rheumatism in a child of two and a half years, reported by Dr. Smith, several important points are brought forward. As Dr. Smith says, the question of cerebro-spinal meningitis was considered in making up the diagnosis. The joint changes which ensue in cases of meningitis have been described by Dr. Charcot and others. The late Prof. J. K. Mitchell advocated the neurotic origin of rheumatism, and his son, Dr. Weir Mitchell, has published many observations proving the dependence of joint changes on spinal and nerve lesions. It is now, indeed, established that changes in the joints which cannot be distinguished from those of acute rheumatism, occur in cases of disease and in lesions of the spinal cord, the membranes, and the nerve trunks. This admitted, the case of Dr. Smith may be regarded from this point of view. The joint inflammation, the hyperpyrexia, the opisthotonos, and the muscular spasms (choreic), the whole concluding with coma, may be regarded as due to a common factor—meningitis. Whether one or the other view be taken, the case admirably illustrates the remarkable correspondence between acute rheumatism and certain spinal affections, and goes far to prove their community of origin. This admitted, acute rheumatism becomes not merely an inflammation of the fibrous tissues, but a neurotic affection.—*Phil. Med. News*, Feb. 24.

J. K. I.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F.M.S.

VITAL STATISTICS

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, February 24, 1883.

Towns	Population in 1883	Births Registered	DEATHS REGISTERED			DEATHS FROM SEVEN ZYMOTIC DISEASES								DEATH-RATE per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	Deaths from Phthisis	From all causes	From seven Zymotics
Dublin, -	349,685	867	983	164	256	-	-	2	1	53	45	16	115	36·6	4·4
Belfast, -	214,022	553	573	100	91	3	7	37	1	28	7	13	71	34·8	5·8
Cork, -	80,124	170	172	17	52	-	-	-	2	-	8	1	24	27·9	1·8
Limerick, -	38,562	85	98	13	34	-	-	-	-	-	1	3	10	33·1	1·4
Derry, -	29,162	73	90	9	27	-	-	1	-	-	1	3	15	40·1	2·3
Waterford, -	22,457	45	50	5	16	-	-	-	-	-	2	1	8	29·0	1·7
Galway, -	15,471	26	39	5	15	-	-	1	-	-	-	1	5	34·3	1·8
Newry, -	14,808	20	46	6	16	-	-	-	-	5	-	-	4	38·7	4·2

Remarks.

A general rise in the death-rate is to be noted; it was very high in all the towns included in the table, ranging from 38·7 per 1,000 of the population annually in Newry and 36·6 in Dublin to 29·0 in Waterford and 27·9 in Cork. In Belfast it was 34·8. In the sixteen principal town districts of Ireland the registered deaths represent an annual mortality of 34·5 per 1,000 inhabitants. This high death-rate contrasts unfavourably with a mortality of 23·0 per 1,000 per annum in twenty-eight large English towns (including London, in which it was 21·0), 22·0 in Edinburgh, and 30·8 in Glasgow. If we omit the deaths (25) of persons admitted into public institutions from places outside the district, the death-rate of the Dublin registration district falls from 36·6 to 35·6; that in the city proper (within the municipal boundary) becomes 40·2.

Febrile or zymotic diseases are now separated in the Registrar-General's Weekly Returns from parasitic and dietic affections, which were formerly included under the generic term "Zymotic" in statistical

tables. The rate of mortality caused by them ranged from 5·8 per 1,000 per annum in Belfast and 4·4 in Dublin to 1·7 in Waterford and 1·4 in Limerick. In Dublin the rate rose from 2·8, 2·7, 2·0, and 1·8 respectively in the previous four periods.

There were 867 births and 983 deaths recorded in the Dublin registration district, compared with 820 births and 816 deaths in the preceding four weeks. The mortality rose considerably at both extremes of life—the deaths of infants under one year being 164, against 146, and those of persons aged 60 and upwards being 256, against 218. This unfavourable result was due to a more widely spread prevalence of zymotic diseases in infancy and an increased fatality of affections of the breathing organs at the other extreme of life.

Febrile zymotic diseases caused 135 deaths, against a ten-years' average of 141·5, and compared with 79 deaths in the previous period. It is thus evident that the deaths were nearly up to the average, and were nearly double the number registered in the first four weeks of the year. To the 135 deaths whooping-cough contributed not less than 53, and fever as many as 45. Forty-six of those who succumbed to whooping-cough were children under five years of age, including 16 infants of less than one year. Two deaths were referred to scarlet fever and one to diphtheria. The deaths from fever rose from 24 to 45, of which 19 were ascribed to typhus, 16 to typhoid, and 9 to fever of ill-defined type. Most of, if not all, the last-named 9 deaths were no doubt due to typhus, a serious epidemic of which is now prevalent in Dublin. The returns from Belfast are again very unsatisfactory—no less than 37 deaths from scarlet fever were registered and 28 from whooping-cough. Besides these, measles caused 7 deaths and smallpox 3. Whooping-cough is also prevalent and fatal in Newry (5 deaths).

Pulmonary consumption was very destructive to life. The deaths from this cause rose from 93 to 115 in Dublin, from 62 to 71 in Belfast, from 20 to 24 in Cork, and from 6 to 15 in Londonderry.

Respiratory diseases were very fatal in Dublin—the deaths rose from 222 in the first four weeks of the year to 301. The average deaths in the corresponding period of the previous ten years were 252·3. Among the casualties are included 209 deaths from bronchitis (average = 193·2) and 46 deaths from pneumonia (average = 28·7).

On Saturday, February 24, returns from the principal Dublin hospitals showed that the number of cases of the chief epidemic diseases under treatment were—smallpox, 0; measles, 2; scarlet fever, 6; typhus, 74; enteric fever, 17; pneumonia, 14.

The mean temperature of the four weeks was 42·2° in Dublin, 43·8° at Cork, 40·8° at Belfast, 42·2° at Greenwich, 41·0° at Glasgow, and 40·0° in Edinburgh. These are about average values for the time of year.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.
for the Month of February, 1883.*

Mean Height of Barometer,	-	-	-	29·905 inches.
Maximal Height of Barometer (on 23rd, at 9 a.m.),	-	-	-	30·802 „
Minimal Height of Barometer (on 2nd, at 1 a.m.),	-	-	-	28·804 „
Mean Dry-bulb Temperature,	-	-	-	43·4°.
Mean Wet-bulb Temperature,	-	-	-	41·4°.
Mean Dew-point Temperature,	-	-	-	39·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·242 inch.
Mean Humidity, --	-	-	-	84·6 per cent.
Highest Temperature in Shade (on 21st),	-	-	-	57·9°.
Lowest Temperature in Shade (on 19th),	-	-	-	29·1°.
Lowest Temperature on Grass (Radiation) (on 1st),	-	-	-	25·8°.
Mean Amount of Cloud,	-	-	-	62·3 per cent.
Rainfall (on 17 days),	-	-	-	3·752 inches.
Greatest Daily Rainfall (on 1st),	-	-	-	1·007 „
General Directions of Wind,	-	-	-	S.W., W.S.W.

Remarks.

During the first three weeks stormy weather with heavy rains prevailed. From the 20th an anticyclone lay over the British Islands and France, so that the weather became fine and quiet, meanwhile continuing for the most part mild and open. The mean temperature (43·4°) was slightly above the average (42·8°) of the previous eighteen years. The rainfall (3·752 inches) was considerably in excess of the average (2·089 inches), but the rainy days (17) were about the average (17·5). Of the rainfall more than *one-fourth* was precipitated on the night of the 1st and morning of the 2nd in connexion with a deep cyclonic depression which had advanced to St. George's Channel by 8 a.m. of the 2nd. After the 17th only ·051 inch of rain fell in Dublin.

The month may be divided therefore into a stormy wet period terminating on the 17th, and a quiet, dry period commencing on the 18th. This favourable change depended on a complete change in the relative distribution of atmospherical pressure over the N. and W. of Europe. An area of very high barometer (anticyclone) had for many weeks held its own over Northern Russia and the Baltic, while successive areas of low pressure (cyclonic systems) had been travelling northwards across the Atlantic, affecting the French, but to a greater extent the British, coasts. At times very steep gradients for southerly winds were formed over Ireland and Scotland, so that several gales from S.E. to S.W. were felt. Violent winds, heavy falls of rain, sleet and hail, and sudden variations of temperature were the leading features of the week ending

Saturday, the 17th. At 8 a.m. of the 12th the barometer was down to 28·77 inches at Mullaghmore, Co. Sligo, but as high as 30·24 inches at Toulon. A thunderstorm with hail occurred at Valencia in Kerry during the afternoon, and hail fell in Dublin. Early on the morning of the 15th a thunderstorm with hail and heavy rain prevailed to S.E. of Dublin—during the day severe squalls of hail and sleet were experienced, and much snow fell in the counties of Down and Antrim. On the night of the 16th and morning of the 17th rain fell in torrents a few miles S. and S.E. of Dublin, whereas only a moderate though steady rainfall occurred in the city. On the night of the 18th, owing to a clear sky and uniform pressure, a frost was observed, the thermometer falling to 29·1° in the screen in Dublin. On the 20th the high pressure in the N. of Europe gave way suddenly and permanently, while an anticyclone formed over the Bay of Biscay and France. The latter system finally developed and spread northwards, so that at 8 a.m. of the 23rd the barometer reached the exceptional height of 30·90 inches in Brittany, and the isobar of 30·80 inches embraced the southern half of Ireland and of England and the N. and N.W. of France. Beautiful weather ensued, the direction of the wind (W.S.W.) in Ireland preventing any severe cold, and the sky being chiefly clear until the 26th, after which there was a dense cloud canopy, and some drizzling rain fell occasionally.

In Dublin the range of atmospherical pressure amounted to two inches. Solar halos were observed on the 1st, 8th, and 19th. Snow or sleet fell on the 1st, 11th, and 15th; hail on the 1st, 10th, 12th, and 15th. A thunderstorm occurred on the 15th. The atmosphere was foggy on the 18th, 19th, and 25th.

INJECTIONS OF BROMIDE OF POTASSIUM IN CHORDEE.

DR. CAMBILLARD, in his *Thèse de Paris*, for 1881, advocates the employment of a solution of potassic bromide to quiet chordee. Every one will admit, he truly says, that the painful erections called chordee are very difficult to relieve, and that the number of the remedies proposed is only equalled by their inefficiency. He has obtained uniformly good results from urethral injections of the following:—*R.* Aquæ, ℥ij.; glycerini, ℥iij.; potassii bromidi, ℥iss.; tinct. opii, ʒj.—*M.* Sig. Four injections of this quantity in twenty-four hours. To prevent the nocturnal attacks, he insists that the last injection be practised just on retiring for the night. These injections cause almost no pain, and are very effective in relieving the distress.—*Med. News.*

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ALLOCHIRIA.

UNDER the name allochiria (ἄλλος, χείρ) a condition has been described by Prof. Obersteiner (see *Brain*, July, 1881, p. 153), in which a peculiar crossed sensibility is exhibited. Thus in a patient, whose case is described by Dr. Hammond in the *N. Y. Med. Jour.* of Jan. 13, 1883, the touch of a finger, the scratch of a pin, or a deep puncture with the blade of a pen-knife, was equally unfelt in the right leg. On making the like experiments on the left leg, he complained of pain when the knife was stuck into it, and automatically carried his hand to the place which he supposed had been punctured, but instead of touching the spot injured, he indicated the exactly corresponding situation on the other leg. Repeated experiments led to like results. He had sensibility in the left leg, but referred all impressions to the other side. Obersteiner who made a *post mortem* examination in one case, following direct injury to the spine, found a lesion of the posterior horns of gray matter in portions of the cervical enlargement, which were transversely divided by a peculiar, structureless, transparent mass. Dr. Ferrier has also reported a case following severe cranial injury in which a similar condition existed (*Brain*, October, 1882, p. 389). Neither he nor Obersteiner (who has met with four cases), however, offer any explanation of the mechanism of its production. Dr. Hammond proposes a theory to account for this peculiar sensory disorder, which he illustrates by means of a diagram, but which we must endeavour to explain without a reproduction of the diagram. In cases of disease or injury of the posterior horns of gray matter, whether they be primarily involved or secondarily, as in locomotor ataxia in which allochiria exists, either the lesion must be unilateral, or, if both horns are involved, the lesions must be at different levels. A sensation starting at a given point in the right lower extremity would in the normal condition follow the fibres to reach the cortex in the left hemisphere, where it would be referred to its original starting point. But suppose there is a lesion in the left posterior horn at a point in the upper dorsal region, then the sensation would be directed through the gray commissural fibres to the right posterior horn, and would reach the cortical centre in the right hemisphere, which is in relation with fibres coming from the left side of the body. The sensation would, therefore, be

referred to a spot on the opposite side of the body to that in which the sensation started. This would constitute the condition of *allochiria*, in which all impressions made, for instance, on the right side of the body, would be felt on the left, while those made on the left would be felt in their proper situations. But suppose there is another lesion. If this is symmetrical with that on the right side in the dorsal region, it is evident that no sensorial impressions from either side can reach the brain; there will be absolute *anæsthesia* in all parts below the lesion. Let us further suppose, however, that the other lesion is lower down. Then impressions coming from the seat of the impression made on the left leg will be diverted to the left side on reaching the obstruction, and, arriving at the left lower extremity, will either be altogether arrested, leading to complete *anæsthesia* at the seat of the impression made on the left leg, or will be again diverted, and, reaching the right cortex, though with their strength greatly impaired, will be imperfectly felt at the seat of the impression made on the left leg. Such lesions explain, according to Dr. Hammond, those cases in which there is absolute *anæsthesia* on one side of the body, with sensation on the other side for impressions coming from both sides. They also show, as Obersteiner asserts, that *anæsthesia* is not a necessary concomitant of *allochiria*.

NERVE STRETCHING IN SCIATICA.

THIS operation has been frequently performed on various nerve trunks and for many affections, but whether the operation is on the whole an advance in surgical therapeutics or not is an open question. In looking over the list of diseases for which nerve stretching has been performed, one is struck by the great diversity of conditions which it is supposed to counteract. Often, indeed, it has been done for the relief of entirely opposite conditions—*e.g.*, for peripheral and central lesions, for paralysis and spasmodic affections, for pain and *anæsthesia*. It is obvious, therefore, that the status of the operation has not been yet definitely settled. Bearing in mind the fact that stretching a normal nerve trunk produces *anæsthesia* and paresis in the limb operated upon, we should expect to derive benefit in those cases where pain and spasm are the most prominent morbid phenomena, and it is in just such cases that marked benefit is obtained, neuralgia and spasmodic affections being cured in a large percentage of cases. Locomotor ataxia or other central affections will be benefited only to the extent of relieving pain and spasm, which, however, would justify the treatment in many cases. Sciatica is a painful affection of the buttock and posterior portion of the thigh. The pain follows the course and distribution of the great sciatic nerve; it is sometimes limited in extent; at others it shoots down into the leg and foot, often following the course of the musculo-cutaneous nerve. As a rule pressure upon the sciatic is painful, but the pain is especially marked at certain points, the

“puncta dolorosa.” Of course sciatica simply indicates pain, but numerous pathological conditions are embraced under it, hence one plan of treatment cannot be expected to succeed in every case. There are frequently, as morbid appearances, injection of the neurilemma; pus or blood may sometimes be infiltrated into the sheath. The pain may also be due to cancer of some adjoining organ, *e.g.*, the uterus, or to abscess pressing on the nerve during some part of its course, or to caries of the pelvic bones, but this is secondary or symptomatic sciatica. The most noticeable symptoms of sciatica are its gradual invasion, marked pain, impairment of locomotion, diminished temperature of the limb, and chilly sensations. It is caused by exposure to wet and cold, and hence is most often found among labourers and in the male sex. Idiopathic sciatica is a tedious and often incurable disease, hence any method which looks like a successful treatment should at least be carefully considered. Dr. Randolph Winslow (in the *Western Medical Reporter* for December, 1882) gives notes of a case successfully treated by nerve stretching. A man, aged fifty-two years, after being blistered, and other various treatments tried without effect, came to Dr. Morris, who called Dr. Winslow in to consult as to the propriety of trying nerve stretching. It was decided to adopt this plan of coping with the disease. They cut down upon the nerve at about the middle third of the thigh, hooked the index finger under the nerve contained in the sheath, and made strong traction on both ends, finally lifting the limb from the bed by the nerve. The wound was cleaned and closed. The next day the pain was much less. In five days the old pain was all gone, though some soreness from the operation remained. Patient was up in two weeks; leg straight; no pain save an occasional dart along the peroneal nerve, with sensation as though the foot were asleep. Nearly three months after the operation, his improvement continues. Walked five miles day before with scarcely any fatigue or discomfort. Dr. Winslow believes the best place to operate is above the popliteal space after the nerve passes under the long head of the biceps. Some anæsthesia and paresis are left after the operation, but these gradually pass away.

J. K. I.

THE TREATMENT OF ULCERS, ESPECIALLY THOSE OF THE LEG.

“ULCERS heal only when their edges are on a level with or below the level of the surface of the ulcer,” says Dr. Boenning, of Philadelphia (*Western Med. Reporter*, p. 432). How can we cure them? We will suppose that the edges of the ulcer are undermined, ragged; the surface is grayish; the few granulations which exist are flabby, dropsical; the skin surrounding the ulcer is purplish, and, when the leg is dependent, pain, now and then, shoots through or around the ulcer. Let us suppose the diameter of the ulcer is six inches, and circular in form. How shall

we treat it? 1st. As the edges are undermined, ragged and purple (deeply and heavily laden with stagnant blood), I unload the surrounding circulation and get rid of the edges by encircling the ulcer by a deep incision, making a fresh *non-undermined* edge. 2nd. As the surface of the ulcer is covered with poorly elaborated granulations, and, as a rule, much *débris*, an excellent procedure is to scrape the surface of everything which could retard cicatrisation. Now the ulcer is in a condition ready for the application of the third step, in the process of the treatment—namely, the application of the plate, which should not be more than one-eighth inch thick or one-sixteenth inch thin. The surface of the plate should be *smooth*, the cut edges *filed*, and the plate cut the *exact shape* of the ulcer. Suppose our ulcer is six inches in diameter; scraped and freshened edges; how large should the plate be? At least six and a half inches in diameter, so that it will rest upon the *EDGES* of the ulcer a *quarter* of an inch *all around*. The plate should be carefully cleaned, dried and smeared with ointment, then carefully adjusted and held down *very firmly* by adhesive plaster. The pressure upon the plate should be as great as it is possible to procure in this way. This dressing should remain for twenty-four hours.” The plate presses down the edges, and thus places the margins in a favourable position to throw out cicatrising granulations. It also checks the exuberant growth of healthy granulations. Each morning the ulcer should be brushed with a stimulating application (ten minims of nitric acid in one ounce of water), and the plate then reapplied as before. The ointment recommended is one of chloral hydrate, gr. 10 to ʒi .

J. K. I.

TREATMENT OF CHRONIC URTICARIA.

DR. GEO. H. FOX, of New York, read a paper upon this subject at the recent annual meeting of the N. Y. State Medical Society. After discussing the ætiology of urticaria, which he declared to be usually dependent upon (1) some functional disorder of the digestive apparatus, and (2) an abnormal condition of the sympathetic nervous system, he said that the means for the cure of chronic urticaria, must always depend upon recognition of this fact, and the use of internal remedies, especially by removal from the intestinal tract of irritating material, and removal from the blood of the waste products of tissue metamorphosis. Among the remedies which had been found especially useful, were alkaline diuretics, saline purgatives, bicarbonate of sodium (ʒss in carbonic acid water half an hour before each meal); gelsemium also has a beneficial action. It is sometimes advisable to restrict the diet, and direct the patient to abstain from certain articles of food, which are especially irritating; and those purgatives which allay irritation, like rhubarb, are often required. When much irritation is present, bismuth has special

advantages. Sulphurous acid, well diluted, will often produce a speedy effect upon the eruption; it probably acts by arresting fermentation in the alimentary tract. A case had been reported by Dr. Shoemaker, of Philadelphia, of chronic character, in which all the usual remedies had been used without avail. On recommendation of Prof. Da Costa, sulphurous acid was then given, with alkaline baths at night. The effect was almost magical, and the patient was relieved at once and cured in a few days. Dr. Fox also had used this treatment with equal success. A lady who was apparently otherwise in perfect health, was troubled with chronic urticaria; the only evidence of gastro-intestinal derangement was a slight coating of the tongue. Many remedies had been used without relief, but upon giving this acid there was marked improvement on the second day, and a cure followed within a week. A second class of cases are those depending upon some disorder of the nervous system due to the presence of certain substances in the blood. To this class belong the cases of urticaria caused by the administration of remedies such as quinine, cinchonidia, &c. When urticaria occurs in the course of ague, it is a question, in some cases, whether it is attributable to the malarial poison or to the remedies given. Physicians should bear in mind that some patients have a special susceptibility, and a minimal dose of the cinchona salts will cause an urticarious eruption. In other cases, the eruption is symptomatic, and is cured by quinine. Cases have been recorded when the urticaria was periodical, and appeared at the same hour every day. For the neurotic cases belladonna, or atropia, has been used with good results; salicylate of sodium (one grain every hour until some physiological effect has been produced) has been recommended; larger doses are more likely to cause the eruption than to allay it. After referring to other vaunted remedies Dr. Fox said that the successful treatment of urticaria must depend upon a knowledge of its ætiology in each case; and that a knowledge of this kind is more essential to its cure than any amount of experimentation with unknown or known remedies.—*Med. News*, Feb. 10, 1883.

THERAPEUTICS OF ARSENIC.

THE therapeutical value of this metal is almost universally esteemed. Among the many favourite and extensively used medicaments it ranks equally high as any other as regards the number of cases to which it is applicable—and that with success. Perhaps by a consideration of its toxic effects we may be able, with a degree of certainty, to approach what its medical properties might be from its affinity for certain organs. It is found, after death, in the brain, liver, spleen, kidneys, lungs, heart, bones, and stomach. It has its specific effect on the stomach even if applied externally, and its long-continued use in poisonous doses causes changes in the spinal cord, which are manifested as an acute myelitis, or sometimes

a diffuse inflammation of the white substance; and paralysis arising from arsenic is usually central in its origin. It may be assumed, therefore, from these effects that the administration of arsenic would be beneficial in diseases of the stomach and nervous system. Its value in cutaneous diseases and in diseases of the stomach is well known. In irritative dyspepsia, gastric pain, and in the vomiting and pain due to chronic gastric ulcer, *one minim* of Fowler's solution, or the fiftieth or hundredth of a grain of solid arsenic will work wonders. A remarkable property of arsenic is to diminish the excretion of carbonic acid from the lungs, and thus economise waste of tissue, and thus we have an explanation of its effects in disease of the respiratory organs. It is one of the most certain remedies for asthma. In this disease it must be given in large doses, the sixth of a grain night and morning. Dr. Martelle reports a case of inveterate asthma which was cured by subcutaneous injection of Fowler's solution. It has been used successfully in phthisis pulmonalis by Dr. Crawcour, who says he would as soon abandon cod-liver oil as arsenic in his treatment of this ailment. In malarial fever it is almost equal to quinine. Dr. Crawcour's method of treating these affections is to break the paroxysm with quinine and complete the cure with arsenic, the twenty-fourth to the twelfth of a grain being the dose he recommends. For children it is unrivalled, while they almost invariably reject quinine. Dr. Lambrosa has reported cures in desperate cases of pellagra by arsenic, in doses of $\frac{1}{4}$ to $\frac{2}{3}$ of a milligramme, and, where this disease is endemic, medication by arsenic and chloride of sodium has been tried with wonderful efficacy without attempting the almost impossible task of changing the diet of the population. Cases of pernicious anæmia and Addison's disease have been reported to have been cured by arsenic, and Billroth reports in his Surgical Clinic six cases of lymphomata in which, he says, arsenic was employed with remarkable success. In one reported case the treatment lasted 53 days. This patient commenced with 5 drops daily of Fowler's solution, gradually increased to 40. In other cases it was used both internally and hypodermically, 3 to 9 minims being injected at a time. Professor Gies has demonstrated the benefit of arsenic on nutrition, the body weight of animals treated was increased, as also the subcutaneous fat. Uterine troubles are also wonderfully treated with arsenic. In many maladies in which the uterus plays the chief part there is congestion; in all of these, whether there be dysmenorrhœa, amenorrhœa, or menorrhagia, we shall find arsenic one of the chief therapeutic agents, provided there be no organic or obstructive lesions. In gout, rheumatism, and the various neuralgias we find in arsenic one of our most potent agents. This is easily understood, as Schultz has shown that arsenic acts as an oxidising and deoxidising agent. Arsenic has been found useful in many forms of cardiac disease, especially those characterised by fatty degeneration or

mitral obstruction. In all these it acts as a cardiac stimulant, diminishing palpitation and relieving dyspnoea. In albuminuria, in Bright's disease, and in diabetes, Dr. Crawcour states it has been successful. In chorea, Ringer says arsenic is the best remedy, and recommends its use in large doses. Arsenic has long been used for snake bites in India, and this fact has led Dr. Crawcour to try it in cholera (some of the symptoms of which are identical with those following venomous bites), and with success. Among the mineral waters highly recommended we find arsenic as a component part. Vichy has a large proportion, also those of St. Etienne and La Bourboule. These waters are recommended as curative for scrofula, asthma, chronic bronchitis, pertussis, anorexia, gastralgia, constipation, dyspepsia, anæmia, chlorosis, muscular debility, chorea, neuralgia, diabetes, chronic gout, cutaneous diseases, and are said to be specific in sea-sickness. In surgery the use of arsenic externally is well known, and has a wide range of usefulness. In diseases of children Dr. Crawcour considers arsenic does most good. In diarrhoea, chiefly that of dentition, in dysentery, cholera infantum, and as a tonic, it is invaluable. Also in scrofulous children it is useful, and is recommended on account of its tastelessness, small dose, and the ease with which it can be given with any kind of food.—*New Orleans Med. and Surg. Jour.*, Feb., 1883.

J. K. I.

THE TREATMENT OF SYMPTOMS INDICATING DANGER IN THE ANÆSTHETIC STATE.

THE anæsthetic state is a condition of danger. It means the suspension of the functions of animal life, the organic functions, especially respiration and circulation, continuing. This primal fact, then, indicates the danger to be provided against, *cæteris paribus*. Chloroform endangers the circulation, ether the respiration. Sometimes, however, chloroform paralyses the respiratory centre, rarely ether paralyses the heart. The treatment, therefore (disregarding exceptional conditions), resolves itself into the administration of remedies to prevent or relieve the tendency to cardiac paralysis on the one hand, or to respiratory failure on the other. The *first prophylactic* is the relinquishment of chloroform altogether—there are a few instances where it however has an advantage over ether, viz., in operations to be performed by candle-light, in which ether may form an explosive material and cause danger; also in obstetrics to assuage the pains of labour, and in various obstetric operations. In most other cases ether should be used. The *second prophylactic* is the use of morphine hypodermically—before the inhaling has commenced, according to Bernard—when analgesia has been produced, according to Messbaum. Bernard's method seems to be the better, because the effect of morphine prevents the sudden failure of the heart, sometimes induced by a few whiffs of chloroform vapour, facilitates the inhalation by

lessening the irritation of the air-passages, and diminishes or prevents the stage of tetanic rigidity, with its stertorous breathing and cyanosis. It is important to ascertain the condition of the patient. The habits of life, the absence of cerebral, of pulmonary, and of cardiac diseases of a nature contra-indicating anæsthetics, and this should not be founded on a mere superficial examination of the chest, but by a thorough investigation of the life-history in its pathological aspects as well as a minute study of the somatic state of the time. The quickest mode of dying is by arrest of the heart's action; unfortunately in a large number of cases the heart is incapable of further action when its embarrassment is ascertained, and hence the wisest measures may be futile. Digitalis has been employed subcutaneously, but if this drug acts rapidly enough to affect the circulation, the result must be disastrous, since it induces such a rise in the arterial tension as to impose additional work on the heart. A remedy acting in the opposite way—to lower the tension at the periphery, and thus diminish the resistance to the propelling power of the heart—seems *à priori* to be more suitable, and experience confirms this theoretical view. Amyl nitrite used hypodermically has been of immense service in cases of threatened cardiac paralysis. From 3 to 5 minims under the skin at any point, or, if respiration is going on, the effect is more speedily procured by inhalation. The intra-venous injection of ammonia is also a promising expedient to arouse the heart. Atropine has also the power of increasing the heart's power. As a rule, however, it is better to administer atropine with morphine before beginning the inhalation of the anæsthetic vapour. Acupuncture and electro-puncture of the heart have been suggested, but they are rather injurious than beneficial. So much for cardiac failure. In respiratory failure (the chief danger in ether inhalation) the respiratory centre should be supplied with blood as quickly as possible. Nélaton's method of inverting the body accomplishes this. The tongue falling back in the throat forces down the epiglottis, hence to draw out the tongue is a most necessary expedient for freeing the entrance to the larynx. It accomplishes more, however, for the strong traction on the basal attachments of the tongue, exerts a reflex effect on the respiratory centre, and this, according to some, is the chief use of the practical faradisation of the chest muscles. Inhalation of ammonia, irritation of the Schneiderian mucous membrane, are the means resorted to, for reflex stimulation of the respiratory centre. Dashing cold water over the chest exposed to a draught from an open window is a doubtful measure, which, of little use at the time, is apt to be followed by bronchitis or pneumonia. Certain stimulants to the respiratory centre may be employed—*e.g.*, atropine and strychnine subcutaneously; alcoholic stimulants are of doubtful utility, though apparently beneficial in some cases. As chloroform and ether are derivatives of alcohol it seems to be irrational to use it as an antidote for depression

caused by these anæsthetics; but the counter-irritant effect of the injection may have a favourable influence.—*Philadelphia Medical News.*

J. K. I.

SCHEME FOR ENCOURAGEMENT OF ORIGINAL RESEARCH IN SANITARY SCIENCE.

THE Grocers' Company of London have organised a scheme with the general object of encouraging original research in sanitary science. It consists of two forms of endowment—the one, meant as maintenance for work in progress, in fields of research to be chosen by the worker himself; the other, meant as reward for actual discovery, in fields of research to be specified from time to time by the Company. With the former intention, the Company have established three research-scholarships, each of £250 a year; with the latter intention, they appoint a discovery-prize of £1,000, to be given once in every four years.

The research-scholarships are intended as stipends for persons engaged in making exact researches into the causes of important diseases, and into the means by which the respective causes may be prevented or obviated. The court of the Company propose to appoint to two of the scholarships in May, 1883, and to a third in May, 1884; after which the vacancies which occur will be filled in each succeeding May. Subject to the conditions of tenure, each appointment will be for one year; and the holder will be eligible for re-appointment.

The quadrennial discovery-prize is intended to reward original investigations which shall have resulted in important additions to exact knowledge in particular (previously defined) sections of sanitary subject-matter. The court will, once in four years, propose some subject for investigation; and a period of at least three and a half years will on each occasion be allowed for the investigation of the subject that has been proposed. In determining, on each occasion, what particular subject shall be proposed for the prize, careful regard will be had to all the scientific circumstances of the time; both as to the urgency of existing needs for particular kinds of knowledge, and as to the expectations which may reasonably be held that discovery in the needed kinds of knowledge can be made within the allowed period. The subject for the first discovery-prize will be announced in May, 1883, and the period for investigation will extend to the last day of December, 1886. The court will announce the award in May, 1887; when also (as at present advised) they will propose a further subject for investigation.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*Notes on Dislocations of the Thumb.* By J. E. KELLY, F.R.C.S.I., M.R.I.A.; Surgeon to Jervis-street Hospital; Lecturer on Surgery, Ledwich School of Medicine, Dublin, &c.

DISLOCATION at the metacarpo-phalangeal articulation of the thumb is a subject of such persistent interest that the following observations may not be unwelcome:—

The numerous hypotheses which have been advanced to explain why this dislocation should be, as Sir Astley Cooper avers, “the most difficult to reduce,” may be summarised as follows:—The cuneiform or clubbed head of the metacarpal bone:^a the mechanical resistance^b and change of direction,^c of the lateral ligaments; of the tendons of the short muscles:^d the interposition between the metacarpal head and the base of the first phalanx, of the sesamoid bones;^e of the anterior ligament;^f of both the last-mentioned;^g of the tendon of the flexor longus pollicis:^h the constriction of the neck of the metacarpal bone, by the boundaries of the “button-hole” slit;ⁱ in the substance of the anterior head of the short flexor:^j the contraction of the numerous muscles which act on the phalangeal

^a Hey, Syme.

^b Hey, Cooper.

^c Dupuytren.

^d Malgaigne, Vidal, Hamilton.

^e Humphry.

^f Lawrie, Langer.

^g Lawrie, Pailloux.

^h Lisfranc, Deville, Wordsworth.

ⁱ Waitz.

^j R. Smith, Doe.

portion of the thumb,^a and the difficulty of applying efficient mechanical force to the limited and unstable structures which are displaced.^b

It is unnecessary to discuss all these speculations in detail, as they have been very frequently canvassed by many and exhaustive writers, and when it is remembered that the ten above-mentioned difficulties admit of 1,023 combinations, it is easy to comprehend that much diversity of opinion should exist respecting them. This variability is well exemplified by the report^c of two cases occurring in the practice of Professor Esmarch, in which special mention is made of a single structure—namely, the tendon of the flexor longus pollicis. In both instances operation by anterior incision verified the observations, which derive a peculiar value from their source. In one case the tendon was seen lying “loosely” and unobstructively to the inner side of the protruding metacarpal head; in the other, notwithstanding the adoption of similar treatment, the bone could not be replaced until the tendon, which was discovered lying between it and the base of the phalanx, was drawn to the inner side.

The description of this limited region which is contained in even the most recent text-books of anatomy is so defective that a short review of some of the more important points will render the subsequent observations more intelligible. Owing to the prominence of the condyloid facet for the external sesamoid bone, the metacarpal head is one-eighth of an inch wider on the radial, or outer, than on the ulnar, or inner side; and the superior margin of this eminence projects very abruptly forwards from the metacarpal neck. The antero-posterior diameter of the articular concavity on the base of the phalanx is only three-fifths of that of the metacarpal head. If the metacarpal head be removed by carefully separating from it all the ligaments, which are left attached to the phalanx, an articular fossa is displayed, the walls of which are deeper on all aspects than the antero-posterior measurement of the base of the phalanx, which can be completely covered by depressing the anterior or posterior boundary of the fossa. The walls of this fossa are composed of the different ligaments of the joint and of the sesamoid bones, which are intimately united in its entire circumference. The lateral ligaments, of which the outer is the stronger and the more distinct, radiate from their superior attachments to the antero-lateral aspect of the base of the

^a Cooper, Adams.

^b Liston, Druit.

^c Waitz.

phalanx; their anterior margins pass to the corresponding sesamoid bone, to the lower portion of the corresponding margin of which they are attached to a limited extent; they lie on the synovial aspect of those structures, which, from their analogy to the patellar ligament, may be termed the "sesamoid" ligaments, the inner being the longer, consisting of the parts of the tendons of the short flexor connecting the sesamoid bones with the anterior surface of the base of the phalanx. The posterior ligament, which is mentioned in very few works on anatomy, is a strong, independent structure, perfectly distinct from the dorsal tendons and their expansions, from which it is separated by a bursa; it is loosely attached to the periosteum on the back of the metacarpal bone, upon which its upper margin is gradually lost, its inferior margin is closely attached to the posterior surface of the phalanx, and at the sides it is blended with the lateral ligaments, from which its margins cannot be distinguished. The anterior wall of the fossa is the most complex, consisting inferiorly of the sesamoid bones and fibrous tissue of almost cartilaginous density, and superiorly of the strong and relaxed anterior ligament, the margins of both parts being connected with the lateral ligaments by fibrous tissue, which is also strong and relaxed. The front of the sesamoid bones and the lateral portion of the anterior wall are intimately connected with the tendons of the flexor brevis, while the upper and middle part of the anterior ligament passes abruptly backwards to a notable extent from the tendons, to be attached to the neck of the metacarpal bone; this ligament gets thinner towards its upper margin, and is very extensile. The vessels which supply the outer side of the thumb occasionally pass between those structures, and it is well to remember that they are sometimes of a considerable size. It is interesting to observe the similarity of their position to the articular arteries on the flexion aspect of the knee, which also are protected by the flexor muscles. Of the intersesamoid structures, the upper portion is of fibro-cartilaginous density, constituting, with some decussating fibres from the adjoining tendons, the transverse ligament; the lower part consists of strong but lax tissue. The theca of the tendon of the flexor longus pollicis is closely attached to the phalanx, the sesamoid bones, and the intersesamoid ligaments, while it is but loosely attached to the anterior ligament by strong fibrous tissue. The tendons of the short flexor project considerably in front of the articulation; they are connected by moderately strong transverse bands of fibrous

tissue, which are continued upwards over the muscular portions, and blend inferiorly with the theca of the long tendon. Were it not irrelevant to the surgical nature of this paper, many additional anatomical points of great interest might be noticed, such as the existence of Haversian packets of fat, of fibro-cartilaginous bodies, and of synovial recesses in various parts of the cavity.

In the varieties of this injury the degree of dislocation depends, in posterior luxation, on the extent to which the head of the bone is permitted to escape from the articular fossa, by the rupture of the attachment of the anterior articular wall and of the lateral ligaments; and of the posterior ligament, in the anterior form. The difficulty of reduction is determined by the integrity of the anterior or posterior wall of the articular fossa, and the degree to which it is displaced from its normal position to the opposite surface of the metacarpal head; the most intractable form being that in which the strong anterior wall (consisting of the sesamoid bones and their connecting structures, the anterior ligament, and their connexions to the lateral ligaments and to the tendons of the short flexor) remains intact, and is drawn completely behind the head of the metacarpal bone; the most powerful extension serving only to depress those structures all the more firmly on the articular surface of the phalanx, which is closed by them as perfectly as a box is by its cover. Assuming that the transposition is complete, the less the lateral ligaments are lacerated the greater is the immobility, and consequently the more difficult is the reduction. In the anterior form a similar condition exists, but, owing to two circumstances, the reduction, although sometimes impracticable,^a is generally effected more easily—(1) the posterior ligament is less resistant, and (2) the convexity of the articular surface being on the anterior aspect of the bone, which is that opposed to the ligament, allows the latter to glide more easily from its abnormal position.

The most frequent condition of the parts in complete posterior dislocation (Hey) is as follows:—The phalanx is drawn upwards on the back of the metacarpal bone, the head of which projects forwards. The anterior ligament is torn from its upper attachment, and lies, with the other structures constituting the anterior wall of the articular fossa, between the base of the phalanx and the metacarpal bone; the posterior ligament is separated from the periosteum of the metacarpal bone to an extent depending on the

^a Velpeau, Roux.

degree of displacement; the external lateral ligament is entirely torn, or its anterior margin, where the tension is greatest, is lacerated; the internal lateral ligament is generally uninjured,^a thus influencing the inclination inwards, and the rotation, of the phalangeal portion of the thumb. The extensor tendons are relaxed; the tendon of the long flexor is either lying loosely to the inner side of the metacarpal head, or insinuated between it and the base of the phalanx, its position being most probably contingent on the persistence or laceration of the fibrous tissue which attaches the theca to its anterior ligament. The abductor and adductor muscles are but slightly influenced except by the change of their direction, consequent upon the displacement backward of their insertions; the inner or deep head of the flexor brevis is intact, and the outer or superficial is tightly strained round the external surface of the neck of the metacarpal bone, with or without laceration of some of its substance. Here it is well to consider the anatomy of the "buttonhole" slit. This opening has been described as existing in the "capsule," a term which most probably refers to the anterior ligament, which is too limited a structure to afford a collar to the metacarpal bone. The "buttonhole" proper is placed between the lower portions of the short flexor, which form its lateral boundaries; the upper extremity of the aperture is limited by the slip, unless it is lacerated, from the inner head of the flexor brevis, which joins the outer insertion, and by the aponeurotic bands which traverse the muscle. It is evident that neither by their mechanical resistance, nor by their contraction can any of those boundaries offer such insuperable difficulty to the reduction as is so frequently experienced, because laceration would readily remove the former, while anæsthesia would quickly dispose of the latter. Therefore, it is to the inferior extremity of the slit that one must look for the elucidation of this surgical paradox, and an investigation of the foregoing anatomical details compels us to recognise, as the cardinal difficulty in reduction, the interposition between the bones of the passive anterior wall of the articular fossa.

The following manœuvre, which was first employed more than ten years ago, consists of the addition of circumduction to a methodised combination of recognised expedients, namely—(1) increasing the deformity by bending the phalanges backwards;^b (2) pressing on the projecting ends of the bones;^c (3) applying a rocking or zigzag

^a Lawrie.^b Roser, Sir C. Bell.^c Hey, Bell, Crosbie, Ledwich, Doe.

motion to the phalanges;^a (4) rotating them inwards;^b (5) flexing them towards the palmar surface,^c and, if necessary, (6) the application of extension.^d It is well to realise that reduction is effected by constraining the projecting extremity of the metacarpal bone, to retrace its course through the “button-hole” opening, and to resume its position within the deep articular fossa. Reflecting on the term “button-hole,” which is so generally applied to this aperture, it is interesting to observe the resemblance which this expedient bears to the unbuttoning of a coat, by drawing the most convenient margin of the yielding buttonhole round the projecting portion of the rigid button. The head of the bone corresponds with the button, and the slit to the yielding material—the most convenient and freest margin being the outer, the inner being generally fixed, by the persistent lateral ligament, to the internal side of the metacarpal head—which is also the narrower, a circumstance of which advantage is taken. The operator, grasping the thumb and attending particularly to the immobility of the metacarpal bone, having fixed the injured member in the flexed position, (1) presses his own thumb against the displaced phalanx, and bends the patient’s backwards almost to a right angle, with a slight inclination inwards; the base of the phalanx is then moved along the internal margin of the posterior surface of the metacarpal bone, with a rocking motion until it reaches the inner edge of the articular surface, closely followed by the thumb of the operator, to prevent retraction and to aid by impulsion; when (2) adducting suddenly the base with a slight movement of its narrow inner margin upwards, to “hitch” it behind the internal lateral ligament, and rotating it inward, with the pressure applied chiefly to its external condyle, to impel it obliquely from above, forwards and inwards over the articular surface, and to force the outer boundary of the “button-hole” over the metacarpal head, while (3), extending the wrist, the operator gradually flexes the phalanx and sweeps the middle part of its base along the anterior articular margin until it reaches, in full flexion and abduction, the prominence for the external sesamoid bone; when (4) the phalanges are extended in a straight line with the metacarpal bone. Should additional extension be required an assistant can supply it in the most favourable manner, without interfering with the manipulation, by throwing a loop of

^a Batchelder.

^b Roux, Demarquey.

^c Cooper, Liston.

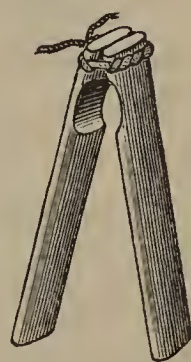
^d Cooper and many others.

strong tape round the posterior surface of the phalanx while it is in the angular position, and drawing it towards the inner edge of the metacarpal surface. The wrist is flexed during the first stage to relax the anterior muscles, the extensors being already relaxed by the position of the base of the phalanx, and, extended during the second stage to permit of free circumduction, by relaxing the extensors, and because the tension thus produced by the short muscles is at this stage favourable to the traction forward of the base of the phalanx, and to the liberation of the anterior articular wall. The phalanx is brought to a right angle, and circumducted on the internal lateral ligament to displace, if necessary, the tendon of the long flexor^a and to induce the upper detached margin of the anterior ligament to pass from its position, between the bones, over the narrow inner edge of the metacarpal head, and it is swept round the anterior margin as far as the prominent external condyloid eminence to complete this transposition, and extended at this point that the projection may hook forward the ligament and allow the head to resume its position within the deep articular fossa. It is well to observe that in the second and third stages two movements of circumduction are employed which coincide at a point posterior to the internal lateral ligament, the first passing inwards and upwards, with a sharp curve, and the second inwards, downwards, forwards, and outwards. They are represented by the accompanying diagram, Fig. 1, which indicates the curves for the left thumb.

Fig. 1.



Fig. 2.



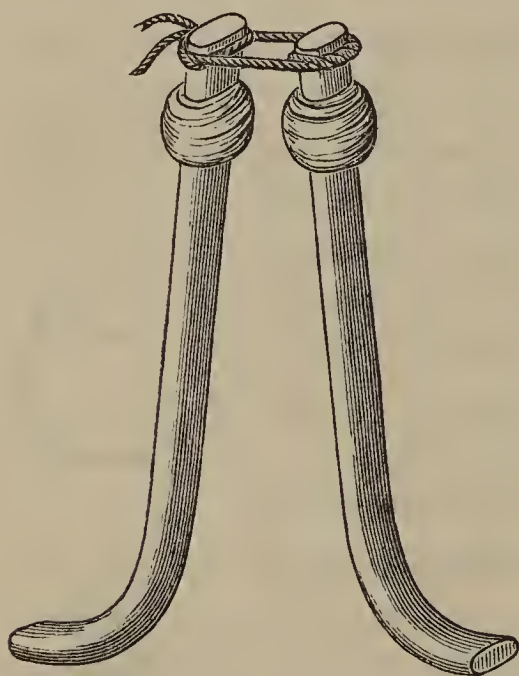
Should mechanical aid be necessary when a special thumb forceps is not available, the accompanying engraving represents a clamp, Fig. 2, which will prove an efficient substitute. It consists of two pieces of wood about six inches long and half an inch broad, which are connected, not too tightly, at one end by a cord, close to which are transverse concavities to receive the first phalanx.^b It is made more secure and less painful by a strip of lint being wound round the grasping portions. It can be applied to the first phalanx, between the prominences of the head and base, and, by permitting the flexion of the terminal phalanx, it favours the relaxation

^a Wordsworth.

^b Messrs. Fannin, Dublin, will supply a more elaborate apparatus constructed upon this principle.

of the tendon of the long flexor. It affords a firmer grasp than that derived from any forceps, retractor, or other apparatus with which the writer is acquainted, except that of M. Farabeuf, which has the same advantage as to the grasp, but is inferior in only allowing rotation on its axis, whereas this simple apparatus affords most powerful leverage. Should the operator wish to have both his hands at liberty to conduct the manipulations, he can secure that of the patient in a larger clamp of the same description, having, instead of the concavities to receive the phalanx, two bulbs, which may be easily added by rolling lint or worsted round its limbs in such a position that they will fix the first metacarpal bone immovably by pressing against it anteriorly and posteriorly; or if its flexion towards the palm be preferred,^a they may be applied to it and to the fifth metacarpal bone. This larger clamp, which will be found useful in many minor operations on the hand, can be

Fig. 3.



held between the knees of the operator, to which it can be attached more securely by a few turns of a bandage, or by being curved, as in Fig. 3.

As the most serious resistance to reduction is due to the passive interposition of the anterior wall of the articular fossa, which retains its malposition independently of its lateral attachments, it is evident that the section of the lateral ligaments, the tendons of the short flexor, or of all those structures, as has been proved by unsuccessful operation,^b does not materially aid in the reduction, while such an operation, performed anteriorly, is difficult, dangerous, and permanently injurious to the functions of the joint. If the intelligent trial of reduction by manipulation should fail, a subcutaneous operation on the posterior surface might be adopted, which is rational, easy, and safe, and which should not be such a source of persistent weakness. To the outer side, of, or between the extensor tendons, a tenotome might be passed through the skin down to the anterior margin of the base of the phalanx and through the intersesamoid space, until it would reach the back of the metacarpal bone, upon which might be divided all the struc-

^a Liston.^b Blandin.

tures forming the anterior wall of the articular fossa.^a Thus the "button-hole" slit would be extended at least by half an inch in the most advantageous direction, and should reduction be still impossible the structures lying to the outer side of the head of the bone might be divided, and, if still more freedom be desired, the subcutaneous incision could be converted into an open wound, when the internal boundary of the "button-hole" could be reached from the most advantageous aspect. A hook^b or lever^c might be applied to the metacarpal head, and retractors also would aid the readjustment. A loop of wire passed through the "button-hole" should make direct traction backwards on the metacarpal head, while separating the lateral margins of the aperture.

An effort has been made to avoid the interruption of the train of thoughts in this paper by the exclusion from the text of quotations and authorities which seriously disturb the attention and exhaust the patience of the reader. In the footnotes it has been attempted to acknowledge such ideas as have been reproduced knowingly, and of the balance a share is claimed as being the common property of the human mind. Originality at best is but a kaleidoscope, its highest product being nothing but a new combination of a few time-honoured truths.

ART. XI.—*A case of Displacement of the Heart by Violence, with Dislocation of the Clavicle and of three Ribs from their Cartilages.*
By W. H. T. WINTER, L.K.Q.C.P.I.; late House Surgeon to the Wolverhampton and Staffordshire Hospital.

I HAVE to express my obligation to Mr. Manby for permitting me to report the following case, which was under his care in the Wolverhampton and Staffordshire Hospital. The extreme rarity of the injury invests it with exceptional interest, for so far as I am able to ascertain the only similar case in our medical literature is recorded by Dr. Stokes in the 36th volume of the *Edinburgh Medical and Surgical Journal*:—

CASE.—On the 11th September, 1882, T. P., aged nineteen, was injured by the fall of a wall, against which some iron was stacked. He was admitted into the hospital suffering from the following injuries:—The sternal end of the left clavicle was dislocated upwards, forwards and inwards, dragging the clavicular portion of the sterno-mastoid in front of the sternal portion. The 3rd, 4th, and 5th left ribs were separated from

^a Miller, Flower.

^b Humphry, Esmarch.

^c Malgaigne.

their cartilages, and on the front of the chest their extremities formed prominences, over which the skin was tightly stretched. The heart was displaced downwards and to the left, and there was a diffused impulse in the 5th and 6th spaces external to the nipple.

The action of the heart was tumultuous. There was dyspnœa, and the expression was anxious; there was also a leaden hue of the countenance; the hands and feet were cold, and there was a trace of albumen in the urine. The patient complained of respiratory distress and soreness over the back and front of the chest, with especial pain and tenderness over the lower half of the front of the left side of the chest.

The clavicle was reduced with ease, but there was difficulty in retaining it in its proper position, owing to the distress of the patient rendering all surgical appliances and rest in any particular position very irksome to him. The ribs were also partially replaced by applying pressure on the dislocated ends while the patient breathed as deeply as he was able. Pads were placed over the junction of the ribs and cartilages, and the chest bandaged with a broad roller, but the bandage had to be removed whenever there were exacerbations of dyspnœa.

Distension of the stomach increased the severity of the chest symptoms. The patient had therefore to be carefully fed. Small doses of morphia administered frequently calmed the heart's action, and promoted general comfort.

After a time the heart seemed to become more reconciled to its new position, and the patient was very comfortable unless he exerted himself. The expression became happier, and the colour natural, and the albumen disappeared. On October 4th the patient was discharged from the hospital fairly well.

Six months after the accident (March, 1883) the patient was again seen and examined. The left clavicle was loosely attached to the sternum, and the left shoulder had fallen in slightly. The left deltoid and pectoral were somewhat wasted, and the power of the left arm was less than it was before the accident, although it was returning. At the junction of the 3rd, 4th, and 5th left ribs with their cartilages there were palpable prominences. The heart was still displaced downwards and towards the left, and there was a diffuse cardiac impulse below and outside the nipple. The patient had a little pain in the region of the heart, and said that "it catches him like a stitch if he walks fast." Exertion caused palpitation and dyspnœa, but a distended stomach no longer seemed to cause discomfort.

Dislocation of the ribs from their cartilages is very rare, and traumatic displacement of the heart still rarer, if we can judge by the scanty literature on these subjects. On consulting Neale's "Medical Digest" there is no reference to the former injury, and

there is only one case of the latter mentioned (Tibbits, *Lancet*, 1876, Vol. I., p. 598). In South's *Chelius*, Vol. I., p. 776, casual mention is made of dislocation of the costal cartilages, but Mr. South probably refers to dislocations of their sternal ends, which are said to be separated "in violent bending backwards of the body." Mr. Poland speaks of the rarity of fracture of the rib cartilages, and states that Malgaigne had seen only three cases, while Majendie was so fortunate as to meet with five cases in two years. Malgaigne had excellent results by applying a modification of the common truss to the fractured cartilage. Each pad, well protected, was placed on either side of the displacement and allowed to remain for twenty days (Holmes' "System of Surgery," Vol. II.)

A case of displacement of the heart by violence is recorded by Dr. Stokes (*Edin. Med and Surg. Jour.*, Vol. XXXVI.). The patient received very severe injuries of the chest, and his heart was completely displaced on to the right side "with a sensation as if a foreign body, preventing respiration, had been introduced into the right lung." He had pain, throbbing, and a short, dry cough, which aggravated the distress. There was no pain in the left side where the heart had been. The patient was confined to bed for a month, but was an invalid for a year and a half, and never afterwards perfectly well. The cough remained, and was worse in winter, and came on after unusual exercise. The digestion was disturbed, and for three years the stomach was intolerant of the smallest quantity of meat. A large meal caused great dyspnœa and palpitation, and from time to time the tongue became very foul and the stomach disordered. Dr. Stokes bled this patient more than fifty times, "and it is a remarkable circumstance that syncope has never been produced even after the loss of so much as thirty ounces of blood at a time." In 1829 (seven years after the accident) Mr. H. was advised to take digitalis. On one occasion he took as much as ten grains, and for three months he took eight grains every night, with the effect of relieving dyspnœa and diminishing palpitation.

In Dr. Tibbits case the heart suddenly replaced itself, and in Dr. Stokes's and Mr. Manby's patients the lesion remained permanently. Yet these three cases may be advantageously considered together in giving a prognosis when violence may shift the heart from its proper position.

ART. XII.—*Anencephaly*.^a By J. F. KNOTT, F.R.C.S.

CASES of the form of monstrosity known as anencephaly have hitherto been divided into a large number of groups, of which the characteristics are not clearly defined, because the transitional limits cannot in all cases be determined. A condition common to all these monsters is the displacement or absence of the brain, or of some of its parts, while the bones which encase the organ, or should have encased it, are more or less disarranged. Anencephalous fœtuses (excepting cases of partial encephalocele) have no chance of prolonging existence, but die soon after birth; or live, at most, only a few hours or a few days.

Anencephalus is very rare in the lower animals, as it also is indeed in case of the human being. Among 10,683 fœtuses born in the maternity of Copenhagen during ten years, there occurred but nine examples. It is twice as frequent in the female as in the male. If we wish to investigate the causes of this monstrosity, it is necessary to remember that it undoubtedly may take place at very different epochs of fœtal life. It is only when it begins to develop very early, and is complicated by the existence of spinal fissure, that it can be regarded as an arrest of development of the cranium. If, on the other hand, it supervenes at a later period of fœtal life, which, according to the researches of Professor Hannover, is usually the case, the cause is decidedly pathological, and should be sought for in the dropsy which takes place at a period more or less early in the cavities of the brain or spinal cord, and which, acting from within outwards as a mechanical force, determines a rupture and destruction of the brain substance, and prevents the formation of osseous tissue. As a result of this rupture, the galea aponeurotica and the dura mater become detached from the osseous plates already formed, from which it results not only that the bones are deprived of the basis necessary for their future growth, but that the osseous mass already formed perishes for want of nutrition. This is the reason that the bones of the cranial vault become absorbed, while those of the base of the skull remain.

Anencephaly, if we consider man alone, commences not at the date of the origin of the hydrocephalus, but takes place when the solution of continuity occurs. The date of ossification should be

^a An abstract of Professor Hannover's Memoir—*Anencephalia og Misdannelsens Forhold til Hjerneskillens Primordialbrusk*.

borne in mind, remembering that, as has been shown in Professor Hannover's memoir on the primordial cartilage, all the bones formed between membranes, excepting the lachrymal and the lamina papyracea of the ethmoid, are ossified in the foetus of three and a half months. If we add to this the observations made of the development of the bones during the growth of the foetus, the rupture ought, as a general rule, to take place a month, or at most two months, after the commencement of pregnancy, when ossification is but little advanced, and the bones and their surrounding tissues are so soft and flexible that mechanical pressure can have the effect of displacing them from their normal position and modifying their form. What, nevertheless, seems to indicate that anencephalus supervenes at a later period of utero-gestation, is the age of these monsters at birth. Among the large number of cases, of which some have been observed by Professor Hannover himself, and some described by other authors, there were but few occurring between the ages of five and six months; those of seven months make a little more than a quarter, those of eight months a little over a sixth, while nearly half occurred in foetuses which had arrived at the full term, and some were believed to have even gone beyond the period of nine months. In reality, the proportion in which the foetus had arrived at the full term must be still greater, if we remember that these are more difficult and more expensive to preserve in our museums than specimens of less advanced development, on account of which fact they are sometimes altogether absent from collections. Examples of anencephalous foetuses of one to two months are extremely rare.

Anencephaly, in its simplest form, engages but the bones which are formed between membranes—the vertical plate of the frontal, the parietal and squamous portions of temporal and of occipital bones; but it sometimes extends also to other bones of the cranium, when the primordial cartilage of the spine presents, at the same time, a vice of conformation in the way of a spinal fissure.

ANENCEPHALIA SIMPLEX.

The solution of continuity of the brain and its membranes usually takes place opposite the posterior fontanelle, and is found at the points only in some rare cases of partial encephalocele. Among the crania examined by Professor Hannover, there was but one found (in the Musée Dupuytren at Paris) where the rupture appeared to have taken place across the anterior fon-

tanelle. So long as the opening is not increased, the cranium may preserve its vaulted form, especially in the anterior portion, but the vertical part of the frontal assumes a position more and more oblique, in such a way that the superciliary ridge is carried backward, and the orbit is turned more in an upward direction. The opening of the posterior fontanelle next becomes enlarged, and the surrounding bones are absorbed. The process of absorption follows a fixed rule, and takes place from behind forwards, and on the sides, but not backwards from the seat of origin of the deformity. The vertical plate of the frontal bone undergoes a gradual process of absorption, till the superciliary ridge only remains, while the horizontal portion of the bone remains. The absorption of the parietal bone becomes so complete that there remains but a thin scale lying along the superior border of the squamous portion of the temporal. The latter is soon arrested in its development, is placed a little lower than in the normal state of things, but its superior border has merely commenced to be absorbed when the parietal is found to have disappeared. With regard to the occipital bone, the superior part of the squama remains, its upper border becomes thickened and curved backwards, and it may remain in this condition even after the absorption of the parietals and of the frontal has attained its maximum; but it is also finally absorbed, and there remains only the inferior segment, which is not ossified between membranes, but is formed in what Professor Hannover has called the occipito-mastoidean portion of the primordial cartilage of the cranium. The occipito-spinal membrane remains equally intact. When absorption has attained its extreme limit, a triangular opening is seen, at the bottom of which the bones of the basis cranii are exposed; these are not absorbed, but, not meeting with further resistance, are displaced towards the skin. The body and lesser wings of the sphenoid bone are prominent; they form two loops beneath which the optic foramen is seen, with its shrunk orifice transmitting the atrophied optic nerve. In a more extreme degree of anencephaly the petrous bone lies somewhat transversely, but all the changes which supervene in that bone and in the occipital are more strongly marked in the following variety:—

ANENCEPHALIA CUM SPINA BIFIDA.

This form is scarcely as frequent as the other by one-half. While simple anencephaly is usually determined by a pathological

state, the form which we have now to consider is due to a cause entirely different—that is, to an arrest of development affecting the posterior arches of the cervical vertebræ. It is difficult to decide whether that vice of conformation is due to a deficiency of cartilage, at the origin, in the primordial skeleton of the dorsal region; or if, as in the brain, it should be attributed to a dropsy which has prevented the vertebral arches from closing behind. There are cases where the serous fluid has extended without obstruction from the brain into the spinal cord, the inferior part of the squama occipitis, which represents a vertebral arch, presenting a deficiency simultaneous with that of the arches of the cervical vertebræ. But there are other cases in which that part of the occipital bone is preserved as a wall of separation between the pathological condition existing in the cranium and the arrest of development of the dorsal spine. This circumstance seems to indicate, in some cases, a certain degree of independence between the lesions affecting the two portions of the skeleton; but the more likely explanation is that, in most instances, the incomplete formation of the cartilage is first displayed simultaneously with the hydrorachis, and that the collection of serous fluid comes from the brain.

On examination of the bones of intra-membranous origin, we find that this form of anencephaly does not differ in any essential particular from the one previously described, but in the present variety the monstrosity reaches its greatest dimensions, the extent of osseous absorption being very great, the whole of the vertical portion of the frontal may be absent, or represented by the superciliary arches only, and the horizontal plate is narrower from before backwards than in the ordinary state. The parietal bone is reduced to a thin scale, which, by its anterior extremity, rests on the external orbital process of the frontal, and, by its posterior extremity, is united with the ossified portion of the occipito-mastoid segment of the primordial cartilage. The squama temporis is narrowed and placed low, and may be so much affected by pressure as to have its external surface turned downwards; the membrana tympani may be horizontal in position, and carried towards the middle line of the body. The complete rotation of the os petrosum, described by Professor Hannover in his memoir on the primordial cartilage, does not seem to take place in anencephalic subjects.

On the other hand, the bones which are developed in the primordial cartilage undergo great changes, both in form and position.

While the superior segment of the squama occipitis, which is ossified in membrane, is always deficient in these cases, we may find traces of the inferior segment, which is ossified in the occipito-mastoid portion of the primordial cartilage; when the spina bifida is more pronounced, there is also a fissure of the squama, and the two lateral portions are pushed outwards, and placed obliquely with regard to the longitudinal axis of the body. The union of each with the scale to which the parietal bone is reduced continues without change when the position of the former becomes gradually horizontal, in such a way that the face normally turned towards the interior comes to look directly upwards, and the posterior surface vertically downwards. When the spinal fissure is of still greater extent, the two portions of the squama come at last to assume a position completely vertical, in such a way that the surface originally anterior and central is now turned outwards, and the surface originally turned backwards is directed towards the middle line of the body. This characteristic change, by which the two portions of the squama occipitis are so completely folded down, is especially due to the contraction of those muscles of the back of the neck and occipital region which are attached to the outer surface of the affected bone, and whose action, in the absence of the vault of the cranium, have no resistance to overcome. From this comes the singular aspect of the anencephalic fœtus—it seems to have no neck, while the head rests upon the back, which indeed is partly the case, the malformed external ear also touching the shoulder. The scale of the parietal bone has also been folded down on the side of the neck, where it must be searched for. Between the posterior extremity of the occipito-mastoid portion (*i.e.*, the inferior part of the squama occipitis) and the free extremity of the open posterior arch of the atlas, a cartilaginous connexion sometimes forms, which must not, however, be confounded with another connexion that sometimes forms, in the normal state between the jugular apophysis and the transverse process of the atlas (Cruveilhier).

The condyloid part of the occipital bone is drawn more and more outwards and downwards by the occipito-mastoid segment, then becomes longer and narrower, and takes a position, at first oblique, then nearly transverse. The semilunar ossification, behind the condyloid portion of the bone, is carried forwards, and so is the petrous bone, which comes to occupy a transverse position, pushing before it the great wing of the sphenoid. The internal

auditory meatus is turned so as to look almost directly upwards, while the deformed fossa subarcuata is directed outwards. The osseous tubercle formed by the inferior and external semicircular canals, after projecting through the primordial cartilage, is similarly displaced outwards and forwards; the canals become deformed, and hearing is destroyed as well as sight. The body of the sphenoid undergoes compression, the vertical plate of the sella turcica (dorsum sellæ) is turned forwards to a flattened position, the lesser wings of the sphenoid form two loops, and the optic foramen is depressed. As Professor Hannover has already pointed out, in his Memoir on the primordial cartilage, the hypothesis of the basilar portion of the occipital bone being the double body of a vertebra with two arches (analogous to the atlas with the axis and its double body), seems to be specially confirmed by examination of anencephalous foetuses in whom spina bifida co-existed.

ART. XIII.—*The Radical Cure of Varicocele.* By RICHARD L. PINCHING, M.R.C.S.E., San Francisco, California.

IN the *British Medical Journal*, July 9, 1881, Mr. John Duncan, Surgeon to the Royal Infirmary, Edinburgh, remarks:—"The treatment of varicocele always presents a certain difficulty to the surgeon. This disease is not dangerous to life, nor does it seriously interfere with ordinary functions and avocations; but it is a source of harassing if not severe pain, is a matter of solicitude to the patient, and in some cases leads to wasting of the testicle. The former considerations have led some to recommend palliation by suspension, the vein-truss, and the cold douche; while the immense number of operative measures which have been devised, and which are not devoid of danger, bear witness to the importance of the latter." Mr. Duncan adds—"In the subcutaneous ligature by catgut we have a means of meeting the difficulty."

As to the many operations on the spermatic veins I would recommend those who are interested on the subject of the treatment of varicocele to an exhaustive article on that subject by Mr. Royes Bell, Surgeon to King's College Hospital, London (*Lancet*, January 28, 1882), from which the following extracts have been taken:—

"Sir Astley Cooper, who thought so lightly of the disease, was induced in some cases to perform a severe and uncertain operation for its cure—namely, excision of a portion of the scrotum.

Mr. Key actually removed a testicle for a painful varicocele. Sir William Fergusson cured a varicocele by thrusting a red hot awl into the veins when requested by the patient to remove his testicle. Sir Astley Cooper and Sir Benjamin Brodie both discarded the old operation of cutting down on the veins and tying them, as it was attended by phlebitis and death."

"The saying that history repeats itself is undoubtedly true of surgery; for some surgeons isolate the veins selected for obliteration by dissections, tie them in two places with carbolised catgut, and divide them between, operating with antiseptic precaution."

I have shown in these extracts the views of other surgeons of highest reputation with respect to the radical cure of varicocele, the palliative plan of treatment, the old operation condemned by Sir Astley Cooper and Sir Benjamin Brodie, and a modification of the old operation condemned by the leading surgeons of the present day.

About five years ago I was consulted by a young man in this city (San Francisco) who was suffering from varicocele of his left testicle. I recommended the palliative treatment at first. After a short time, finding that he was deriving no benefit from it, he asked me if I could not permanently cure him, or, as they say in America, "I want you to cure me *right-away*;" for, if *I could not*, he would rather put an end to his existence. It just occurred to me that I had read an extract in *The Dublin Journal of Medical Science*, from the pen of Dr. William Colles, Surgeon to Steevens' Hospital, Dublin, in which he recommended the subcutaneous injection of the liquor ferri perchloridi as a radical cure for piles. It struck me at once that this was the remedy for the radical cure of varicocele. I took the initiative on the moment, and suggested the operation to my patient, who at once consented to it. I found there were two large bunches of varicose veins, one in front of the epididymis, and the other higher up in the spermatic cord. I selected the latter situation, and injected ten minims of liquor ferri perchloridi with a subcutaneous needle, placing half a sliced potato between the spermatic cord and the groin to protect the needle and steady the cord. I then plunged the needle, previously charged, through the bunch of varicose veins into the sliced potato, and then, withdrawing the point of the needle into the centre of the varicose veins, I injected the contents of the syringe. Immediate effusion took place into the areolar tissue, which became quite tense and very painful, so much so as

to cause syncope, and he was not able to leave my office for home for some considerable time; nevertheless he was able to resume his usual occupation the following day, and the ultimate result was a radical cure of his varicocele. I have seen him repeatedly since the operation, and there is no symptom of a return of the disease; the testicle has assumed its normal condition and solidity; there remains a hard cord from the agglutinated veins, which appear to be quite obliterated.

Were I to perform the operation again with the liquor ferri perchloridi I should first place the patient under the full power of chloroform, injecting subcutaneously at the same time the solution of morphia, so as to keep him under its influence for some time after the operation.

Some time after this I had two other cases of varicocele, and in these I used an injection subcutaneously of strong tincture of iodine with the same good results, and the pain caused was trifling compared with that caused by the solution of iron. These two patients were able to resume their different occupations the following day, simply using a suspensory bandage as a protection. I should have mentioned that the subcutaneous injection of the tincture of iodine produced considerable effusion into the spermatic cord and areolar tissue likewise.

I shall leave the adoption of this treatment for the radical cure of varicocele in the hands of the profession, and especially to hospital surgeons, who have more opportunities of testing this mode of treatment than the general practitioner; at the same time this is the safer operation for the latter, and, moreover, it is eminently the "*tuto, cito, et jucunde*" operation for the radical cure of varicocele.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON THE URINARY ORGANS.

Clinical Lectures on Diseases of the Urinary Organs. Delivered at University College Hospital. By SIR HENRY THOMPSON. Sixth Edition. (Student's Edition.) London: J. & A. Churchill. 1882. Pp. 175.

The Diseases of the Prostate: their Pathology and Treatment. By SIR HENRY THOMPSON. Fifth Edition. (Student's Edition.) London: J. & A. Churchill. 1883. Pp. 157.

NEW editions of such classical works as these before us, by such a clear and able writer as Sir Henry Thompson, must always be welcome. We congratulate him on the new departure he has made in the form in which these editions are published. "I have always thought it desirable," he says in the preface to his "Clinical Lectures," "to follow a course which has been recently pursued in works of general literature, and have issued this edition, which is more comprehensive and complete than any previous one, at less than a fourth of its former price, so as to bring it within the reach of all students." He has now followed the same course in regard to his work on the "Diseases of the Prostate," having found that the result of the experiment in regard to his "Clinical Lectures" "has amply warranted this new departure in medical literature."

These new editions are printed on good paper, in double columns, and in excellent type. They have strong cardboard covers, and are illustrated with many well-executed woodcuts. The two volumes are uniform in size and in the style in which they have been brought out.

In the first of these volumes the reader will naturally turn with greatest interest to the chapters on lithotrity at a single sitting, in order to see what results have been attained and what opinions are held by the great lithotritist.

The success which has attended this method of treating vesical calculus, in the hands of Sir Henry Thompson, fully justifies him

in regarding it as “superseding the old operation, and to a great extent the operation of lithotomy.” During the last three and a-half years he has used this method almost entirely, and for the last two years without any exception. “During this time I have operated on 112 consecutive cases of elderly men—that is, *on 112 separate individuals*—no one individual having required during that period to be operated on a second time. I have included no case of mere phosphatic concretions. . . . The mean age of the 112 individuals is over sixty-two years and a-half. The number of uric acid calculi is sixty-four, of oxalates four, of mixed calculi fourteen, and of phosphates thirty. *The number of deaths is three only.* This is a better result than I have ever before accomplished. I have operated on a similar number by the old method, once with six deaths, but the average of 400 cases reported to the Royal Medical and Chirurgical Society was $7\frac{1}{2}$ per cent. mortality.” At page 139, Sir Henry thus expresses himself:—“I now think I have proved that the operation of crushing the stone is safe and successful for all small stones; and I think I have also proved, or have gone far to do so, that a stone may be always found when it is small. It follows then, if you admit these things, that lithotrity must be the future operation for calculus in the adult.”

In the new edition of “Diseases of the Prostate,” Sir Henry Thompson calls special attention to a new chapter on operations designed to relieve the sufferings of patients with advanced prostatic disease. Two operations are described. The first was practised by him for the first time nearly fourteen years ago. It consists in making a suprapubic opening into the bladder, and fastening in an india-rubber tube, similar to those used for the trachea. He has had a moderate degree of success with this method. The second operation is one which he has recently tried, and with better result. A description of it has already appeared in the medical journals, and has given rise to some discussion as to priority in recommending this method. It consists in making an opening into the urethra in front of the apex of the prostate gland, and introducing through this a tube which should just reach into the bladder. By this means he hopes to suspend all action on the part of the bladder for a few days—to get rid of all accumulation of urine from the organ—to allay the constant and painful want to pass urine, and also at the same time to abolish catheterism altogether, with its irritating effect on the urethra; and thus the inflammation of the bladder might subside,

and its tolerance of urine might largely increase. "I have no hesitation whatever," says Sir Henry, "in advising the treatment now described as an efficient means of affording very considerable and more or less persisting relief to the worst of these painful and hitherto intractable cases."

These new editions are specially devised for students; to such they will prove invaluable. The price, half-a-crown, is within the reach of all, and we would advise practitioners and students alike to possess themselves of these works, which are so full of sound teaching and practical advice, conveyed in an interesting and most readable form.

Notes from Sick Rooms. By MRS. LESLIE STEPHEN. London: Smith, Elder, and Co. 1883. Pp. 52.

THIS is not a systematic treatise on nursing, but a collection of hints, obviously derived from sympathetic experience, for the guidance of nurses, professional or amateur. It is full of kindly thoughtfulness, and there is not a page without some useful suggestion of practical value for the management of a patient. "Visitors" are not above Mrs. Stephen's notice, nor "crumbs" beneath it. We cordially recommend this little book to all whose duty it is to minister to the sick; not merely to volunteers, but to regular nurses.

The Germ Theory of Phthisis Verified, and Illustrated by the Increase of Phthisis in Victoria. By WILLIAM THOMSON, F.R.C.S. Melbourne: Sands & Macdougall. 1882. Pp. 95.

THIS is a controversial pamphlet, the main points of which are stated on the title-page. The author claims to have anticipated the discovery of Koch, and to have set forth the dependence of phthisis upon the presence of a micro-parasite, in a *brochure*, "The Histo-Chemistry and Pathogeny of Tubercle," published in 1876. In this work he suggested that the micrococci found in tubercular deposits were the proximate cause of the disease, and he explained their action in the aggregation of giant cells to form a tubercle in the manner lately put forward by the German pathologist. The communicability of the disease from the sick to subjects previously healthy, which necessarily follows from the germ theory of phthisis, was strongly urged. The *brochure* was sent, Mr. Thomson tells

us, in 1876, "to very many savants and university libraries in Germany—indeed over the Continent; and amongst others in England to Professor Tyndall, who will probably find it amongst the unconsidered trifles in his library;" but the author disclaims any desire "to undervalue the noble work of Koch, or hint about priority or originality."

To Mr. Thomson is also due the final extinction of the belief that Victoria, being comparatively free from endemic tubercular diseases, was a sanatorium for phthisical patients. He demonstrated that the Victorian mortality from phthisis was not only considerable, but increasing, and that it was a delusion to suppose that almost all the deaths were due to the immigration of fatally stricken invalids in search of health. In 1871, of 841 who died from phthisis, 9·6 per cent. were Victorian-born; in 1880, the number of deaths was 1,175, and the percentage of Victorians 29·2. In the period 1871–81, 11,354 deaths from phthisis were registered in Victoria. Of the victims, 2,725 (24·0 per cent.) were Australians, and 2,234 (19·7 per cent.) Victorians. Not only is the rate of deaths from phthisis amongst Australians thus considerable, but it is increasing steadily. The percentage has risen regularly from 12·02 in 1871 to 32·61 in 1881. Phthisis therefore "has greatly increased amongst native-born whites in Victoria during the last decade."

To the same disease the author attributes the "rapid disappearance of the blacks before the whites." Phthisis was unknown amongst the aborigines until they caught it from the whites. Now the Board for the Protection of Aborigines reports that "lung disease is the chief cause of death among the aborigines, who, when once affected, very seldom recover." Mr. Thomson satisfied himself after careful inquiry that the destructive lung disease prevailing among natives collected together at a *depôt* was "tubercular phthisis spread by contagion."

The cases presented as instances of phthisis due to contagion (pp. 66 *et seq.*) are interesting, but not in themselves conclusive. They are, however, merely a few selected from many which occurred in the author's practice. He hints at the possibility of phthisis being "more contagious in Victoria than it is found to be in England, and more like the form it assumes in the South of France, where a belief has always prevailed that the disease is contagious." It will be a pity if the somewhat embittered controversial tone of this pamphlet should prevent its readers from

profiting by the valuable information, statistical and other, which it contains ; or from giving him the credit he deserves for originality, industry, and perseverance.

Revue Mensuelle des Maladies de l'Enfance. Paris : H. Lauwereyns.
1883.

WE desire to call the attention of our readers to this new periodical devoted to the diseases of children. It may be admitted that there is a need of such a journal—especially among those not familiar with the German language—and the numbers we have seen of our monthly contemporary promise to supply such a want efficiently.

Human Morphology: a Treatise on Practical and Applied Anatomy.
By HENRY ALBERT REEVES, F.R.C.S. Vol. I.—*The Limbs and the Perinæum.*

THE appearance of a new and voluminous work on human anatomy at once suggests the inquiry as to whether it will be found to fill any previously existing blank in the literature of its subject, or, if not, whether it will prove to be so great an improvement on the text-books already provided as to justify the claims upon our attention which it endeavours to establish. The goodly volume now open before us has had full justice done to it at the hands of the publishers—the binding is unobjectionable, and the type and paper decidedly above the average standard used in the preparation of books on medicine and the allied sciences. We are sorry, however, to observe that the vigilance of the compositors and readers has not been commensurate with the liberality accorded in material, and a large number of typographical errors still stain the pages.

The perusal of the text led us to wonder why the title of the work was so selected, as the arrangement and mode of description correspond to those of the manuals intended for the guidance of the student in his dissecting-room practice, and, while giving a large number of important facts in pathology and surgery, the writer does not seem anywhere disposed to digress much into the consideration of any of the perplexing problems of animal morphology. The book commences with a historical sketch of the

progress of anatomical science, which has been prepared with evident care, and will be welcomed by most lovers of the subject as an appropriate introduction to a comprehensive work on human anatomy. The second chapter (of "Introductory Observations") is one in which the more prominent of the external landmarks of the human form are indicated to the student, and important definitions and measurements given. The last of these is in the following words:—"The two lower limbs with the hips [make] about three-sevenths the entire weight." As the line of demarcation of the hips is not definitely indicated, we are left with a very hazy idea of the proportion in question.

In the third chapter the author deals with anatomical technics, a subject in which he evidently feels quite at home. Accordingly, he deals with this part of the work in his happiest manner, and gives the student every desirable information concerning a department of his work in which students are often supposed not to feel more than a secondary interest. This is by far the most valuable portion of the large tome before us; and, as it includes forty-two of its densely-printed pages, it would make a rather respectable little volume, and we should be very glad for our own convenience to see it published in separate form, while we cordially recommend it to the use of the practical student of anatomy.

We are next introduced to the practical study of the anatomy of the upper limb. A prominent feature of the work now appears in the prolonged detail with which the author deals with the landmarks of the surface, and to which a considerable proportion of the text is devoted. These are of course interesting, especially from a practical point of view, but are here given at too great length to receive due attention from the ordinary medical student; and we hold that the presence of a large amount of unessential matter in a student's handbook, which he soon learns to skim carelessly over, is not merely useless—it must have a decidedly demoralising effect.

The treatment of the descriptive portion of the text, the course and branches of the various nerves and blood-vessels, the attachments, relations, and actions of muscles, &c., is decidedly disappointing, and certainly displays no improvement on those to be found in many of the ordinary text-books of less pretentious dimensions which are already in the hands of every teacher and student of anatomy. On page 99 we find the origin of the pectoralis major muscle given in the following terms:—"It arises by aponeurotic fibres, which

intersect those of the opposite muscle, from the cartilages of all the true ribs, the first, or seventh, or both, being excepted; from the aponeurosis of the external oblique, from half the breadth of the anterior surface of the sternum, as far as the cartilage of the sixth or seventh rib, and from the anterior surface of the sternal half of the clavicle." We do not propose to impeach the accuracy of this description, but would like to see a more definite order preserved in the enumeration of a series of muscular attachments. The descriptive pathway, which commences "in medias res," we know to have been, even long before the enunciation of the Horatian edict, specially consecrated to the use of epic poets, and there is hardly any department of knowledge in which we can fancy its adoption less indicated than in a student's handbook of anatomy. We are next told that "the fibres rotate and converge to its insertion." The clavicular portion of the muscle does not undergo the peculiar rotation, being inserted in the order in which they arise. With regard to its actions we find that, "taking its fixed point from the humerus, it will act as an extraordinary muscle of inspiration raising the ribs." The most elementary anatomist must know that the upper fibres of the muscle have an exactly opposite action, but the existence of this knowledge should not have been taken for granted. The insertion of the minor pectoral is described as being "into the *anterior* border and anterior half of upper surface of the coracoid process of the scapula, *blending* with the short head of the biceps and coraco-brachialis." Our own experience would lead us to give the *internal* border, and *not blending* with the common tendon of the other muscles named. Instances of this kind are too numerous to be further alluded to.

The nervous and arterial relations are very imperfectly described, and the schematic plans of the latter contrast unfavourably even with those of Gray's well-known work, and, still more so, with those of Mr. Thomson's excellent edition of Power's "Anatomy of the Arteries."

The illustrations are numerous and for the most part sufficiently indicative of the mutual relations of the parts shown, but they are selected from the most incompatible sources, and the occurrence of one of Noble Smith's very sketchy figures in immediate succession to one of the highly-finished illustrations of Hirschfeld and Leveille strikes the eye with an unpleasant jarring sensation.

The general impression left upon us by a perusal of this volume is that it represents a vast amount of labour and anatomical

research, but attended by a somewhat inadequate result, and we would prefer to see an author possessed of so much industry applying his powers to a subject giving greater room for the display of original ability.

Army Medical Organisation: a Comparative Examination of the Regimental and Departmental Systems. By SURGEON-MAJOR G. J. H. EVATT, M.D., Army Medical Department. Fourth Edition.

IN noticing this pamphlet it is unnecessary to enter upon the well-worn arguments for and against the regimental system familiar to every medical officer of the army. The unification being an accomplished fact, the modifications necessitated by recent experience in the field and the future wants of the service are practical points now under consideration. Dr. Evatt comments very freely upon the absence of honorary distinctions; that while no corps of officers can compare in service with the medical, the prefix "Royal" is withheld, although artillerymen and a crowd of infantry corps are so honoured. He advocates, what some officers of distinction before his time have also urged, that the Army Medical Department and Army Hospital Corps should be grouped together as a "Royal Medical Staff"—a reform upon which there seems to be little difference of opinion. That the title "department" is very distasteful to most medical officers is well known. The retention of the traditional scarlet uniform of the old medical staff is advocated, and also the adoption of a motto and badge. He very properly remarks, "It is absurd to say these little things are to be despised." The badge of the red cross and the motto "Semper et ubique fidelis" are thought most suitable. The classing of medical officers as "non-combatants" is justly animadverted upon as an unmeaning title, which medical officers perpetually repudiate as nothing short of degrading and unjust. That as medical officers serve in every branch of the army "they should be so dressed that in a well-dressed cavalry corps or elsewhere a medical officer should not be utterly conspicuous by ugly uniform." Upon the much-discussed question of the medical officers per regiment we may quote for Dr. Evatt's information the following remarks of Surgeon-Major Corban, in medical charge of the Duke of Cornwall's Light Infantry during the late Egyptian campaign:—"In the Egyptian campaign I saw the immense advantage of the early treatment of the

sick in camp, and keeping all the ordinary mild cases in camp. I found that with simple treatment, a couple of days' rest, and perhaps a little arrowroot and beef-tea, nearly every man returned to his duty. I thus kept the regiment together. . . . Once you let your men go to the field hospital you seldom see them again. . . . In this way many of our regiments melted away after we reached Cairo." Many medical officers of experience have held that the associations of a well-regulated regimental mess and society, and the rubbing off of rough corners there, would be of manifest advantage to young military surgeons for a few years after joining the service. Dr. Evatt has omitted some facts of practical interest to the medical officers in particular—viz., the anomaly of military commandants in general hospitals; of brigade-surgeons serving on the same pay as surgeon-majors in India; of their not ranking with colonels in the army; of surgeon-majors, ranking as lieutenant-colonels, having no well-defined surgico-military title; of there being no professional examinations of junior officers to qualify for promotion—a reform which we think might be reintroduced with advantage. In a scientific corps no officer should, in our opinion, be advanced in rank until he has proved, as combatant officers have to prove, that they have kept pace with the times, and have not been content to rest upon their early laurels.

Transactions of the Pathological Society of London. Volume Thirty-third. Comprising the Report of the Proceedings for the Session 1881–82. London: Smith, Elder, & Co., 15 Waterloo-place. Pp. 455.

THIS volume fully maintains the high reputation which has always attached to the Transactions of the Pathological Society of London.

The present publication, being the thirty-third volume of Transactions, constitutes the thirty-sixth published Annual Report of the Society's Proceedings.

Though less profusely illustrated than the previous volume by seven plates and two woodcuts, it contains 91 more pages of letter-press than Volume Thirty-two.

The increased bulk is partly due to a series of Supplementary Reports in continuance of the histories of cases recorded in Vols. I. to XXXI. These Reports originated from a suggestion of

Mr. Jonathan Hutchinson, on whose motion a committee of ten was appointed to examine the whole of the Society's Transactions, with the object of ascertaining what cases, if any, there were, the histories of which were incomplete at the time of publication, but with respect to which it was reasonably probable that their authors might add facts which would increase the value of their Reports.

Although in many instances it proved that the patient had been lost sight of, or no information was obtainable, yet in many cases important light is thrown on the nature of the specimen originally exhibited to the Society, as well as on the subsequent history of the case.

Studies in Pathological Anatomy. By FRANCIS DELAFIELD, M.D.
Vol. I. Plates I.—XCIII. New York: William Wood & Co.
1882. Pp. 126.

THIS work is a kind of pathological album of highly magnified drawings of the minute lesions of disease which have fallen under the author's observations. There are artotypes, heliotypes, photographs, and photolithographs, of various degrees of merit.

The studies in Vol. I. comprise the Pleura, Peritoneum, Pneumonia, Acute Miliary Tuberculosis, Chronic Pulmonary Phthisis, Acute Phthisis.

In the second volume the description of the lesions of Chronic Pulmonary Phthisis will be completed.

The full effect of many of the plates may be brought out by looking at them through a magnifying glass, but we question if the use of such very high powers is of any very decided advantage.

PART III.

HALF-YEARLY REPORTS.

REPORT ON OPHTHALMIC SURGERY.

By ARTHUR H. BENSON, M.B. Univ. Dubl.; Fellow of the Royal College of Surgeons; Assistant-Surgeon to St. Mark's Ophthalmic Hospital; Lecturer on Ophthalmic and Aural Surgery at the Ledwich School of Medicine; Surgeon to the Throat and Ear Hospital.

BLEPHAROPLASTY.

SEVERAL new operations have been advocated for the cure of partial and complete trichiasis. For trichiasis with entropium the most important advance has been made in the operation described by Dr. Dianoux (*Annales d'Oculistique*, September–October, 1882, p. 132). His operation is a direct development of the suggestion first made by Mr. Spencer Watson in 1873, and since variously modified. It consists in the raising of a strip of skin from the eyelid above the cilia and inserting it below the cilia—thus permanently elevating them by the width of the flap of skin so inserted. This he effects by splitting the lid, as in all such cases; and having raised the cilia-bearing flap up (its extremities being still attached), he buttonholes the skin flap (also left attached at both extremities) through. The skin flap is then stitched to the free border of the conjunctiva, whilst the cilia-bearing flap is made fast to the skin of the lid above.

The portion of the operation for which Dianoux deserves credit is the *leaving attached both ends of both flaps*. The results of this operation are most satisfactory.^a

In the treatment of partial trichiasis an advance has been made

^a I have myself performed this operation at St. Mark's Ophthalmic Hospital in a considerable number of cases, and my colleague, Dr. Story, has also done it in many others, and so far without a single disappointment. This is the more remarkable as blepharoplastic operations are, as a rule, so unsatisfactory. The nutrition of the flaps being good, the healing takes place *invariably*, so far as my experience goes, by first intention, and there is no deformity.

by the mode described by the Reporter at the meeting of the British Medical Association, August, 1882 (*Brit. Med. Journ.*, Dec. 16th, 1882, p. 1203). It consists in destroying each individual offending cilium by means of electrolysis.

A rather fine needle attached to the negative wire of a continuous-current battery is inserted along the cilium to its root. The current is then completed by applying the positive electrode to the skin near the outer canthus. In a few seconds the hair is loose, and comes out easily without any force, and *does not grow again*. The cure is thus permanent.

The method is advisable where there are only a few errant hairs, but where there is also entropium Dianoux's operation is indicated.

CONJUNCTIVAL CROUP.

Dr. H. Knapp (*Archives of Ophthalmology*, Vol. XI., p. 1), in a paper on Croup of the Conjunctiva, says it differs from catarrh, blennorrhœa, and trachoma by the presence of the characteristic whitish membrane, and from diphtheria by several points, which he enumerates as follows:—

1. In diphtheritic conjunctivitis the lids are very stiff and hard; it is difficult or impossible to evert them. In croup the lids are supple and soft, and can easily be everted.

2. The diphtheritic lid is unusually hot and painful to the touch; whereas the croupous lid can be handled without causing much pain.

3. The diphtheritic exudations are continuous from the deposit on the surface through the superficial and deeper layers of the conjunctiva; whereas the croupous exudation is a surface deposit only.

4. The diphtheritic membrane cannot easily be removed, but must be torn off with some force, leaving the subjacent tissue pale and ragged; whereas the croupous membrane can be wiped off as a whole, leaving the subjacent tissue bright red, bleeding, uneven, and finely nodular.

5. The tissue of the diphtheritic lid when cut into is anæmic, and has, in the developed cases, a white, lardaceous appearance; whereas the tissue of the croupous lid is highly congested and soft.

6. The diphtheritic process leads to mortification of the invaded conjunctiva; the croupous process to proliferation and cauliflower, or polypoid, excrescences.

7. Diphtheria readily extends from the lids to the bulbar conjunctiva and the cornea; whereas croup is long limited to the lids,

and only in the severest cases affects the cornea, and seems always to leave the scleral conjunctiva free.

The treatment he advocates is in accordance with the recommendations of Arlt and Sæmisch—viz., to abstain from all kinds of irritant medication as long as the formation of the pseudo-membranes is still active; uninterrupted application, day and night, of iced compresses to the lids, and careful washing away of the secretion with a soft sponge dipped in a very weak solution of chloride of sodium, chlorate of potash, and the like, so long as the inflammation is at its height. As soon as the swelling decreases and the membranes break off, the cold applications may be limited to an hour every morning, noon, and evening, and gradually left off; weak astringents then act beneficially.

He advocates strongly the use of cold in the treatment of all the severest forms of conjunctivitis, whether croupous, diphtheritic, ophthalmia neonatorum, blennorrhœal or gonorrhœal ophthalmia, or acute paroxysms of trachoma.

CONCERNING CATARACT.

Professor Förster, of Breslau (*Archiv. of Ophthalmol.*, Vol. XI., p. 344), in an article on the Maturity of Cataract, its Artificial Ripening, Corelysis, and Extraction of the Anterior Capsule—

(1) Defines a “*mature cataract*” to mean one in which we can positively assert before the operation that there are no longer any cortical layers which will adhere to the capsule and undergo secondary opacification—even if the pupil can still be illuminated and the iris still throws a shadow. An “*immature cataract*” he defines as one of a consistency which experience teaches us is liable to be accompanied with a layer of cortex adhering closely to the capsule—even if the pupil cannot be illuminated and the iris throws no shadow.

(2) Artificial ripening of the immature cataracts he recommends for the purpose of shortening the painful period which lies between the day when the patient can no longer read and the time when the cataract becomes mature. His method is as follows:—He does a preliminary iridectomy on the affected eye. The aqueous of necessity escapes, and the lens is subjected to certain alterations of form by being pushed forward. This loosens, he says, the connexion between the opaque and transparent fibres of the cataract, and the degeneration of the cortical layers is hastened. To increase the effect he, immediately after the iridectomy, *gently* rubs or

strokes the cornea with the blunt angle of a strabismus hook or the closed iris forceps.

Extraction can generally be undertaken in from four to eight weeks after the operation without the dread of any lenticular fibres adhering to the capsule.

(3) Corelysis he obtains by manipulation of the iris through the flaccid cornea. By successively pressing one portion of the margin of the pupil after another towards its ciliary insertion he can successfully break up synechiæ posterior. He has never known this procedure to do any harm to the iris or the lens.

In order to avoid incarceration of the iris in the angles of the incision he adopts this mode of reposition instead of pushing the bit of iris back into the anterior chambers with a spatula or probe, as usually recommended.^a

(4) *Removal of the anterior capsule in cataract extractions* he effects, not by the ordinary cystotome, but by a toothed forceps, in shape like an iridectomy forceps. With this, the pupil being dilated with atropine, he seizes and removes as large a portion of the anterior lens-capsule as he can. He thus minimises the dangers of capsular incarceration in the wound, and lessens the likelihood of iritis and secondary cataract.

SYMPATHETIC INFLAMMATION.

Dr. S. C. Ayres (*Archiv. Ophthalmol.*, Vol. XI., p. 199) reports three cases of sympathetic ophthalmia treated by long-continued poulticing—in one case for four months!—with “most gratifying” results. He quotes several other cases, and adds:—“If they had been treated with poultices it is possible, if not probable, that some vision might have been retained. The beneficial effects of poultices in iritis, cyclitis, non-sympathetic irido-cyclitis, interstitial keratitis, &c., serve as an excellent argument for their use in sympathetic troubles.”^b

^a I have for some months past adopted this mode of reposing the iris, both after simple iridectomies and after cataract extractions, and have no doubt that it is, in most cases, far preferable to the insertion of instruments into the anterior chamber to push or drag back the iris. The instrument I use is a narrow vulcanite or tortoise-shell spatula, curved on the flat. This can be applied directly to the cornea without any injury or disturbance of the epithelium.

^b The *injurious* effect that long-continued poulticing exercises on the conjunctiva has not been mentioned by Dr. Ayres, but must be familiar to all who have to do with strumous cases. I wish to warn of the dangers of indiscriminate and continuous poulticing, and to mention that it is not an entirely harmless mode of treating eye diseases.

ON THE CAUSATION OF RETINAL DETACHMENT.

Professor Leber, at the last meeting of the Ophthalmological Society at Heidelberg, spoke on this subject, and after showing the untenability of most of the theories now held—for instance, of the theory based upon pressure from behind, or on cicatricial contraction of the chorioid, or on distension of the envelopes of the globe—he stated the results of his own investigations.

In his experiments in regard to the introduction of foreign bodies into the interior of the globe, Leber frequently observed, a few days later, extensive detachment of the retina and rupture, which was, of course, not even directly due to the injury in question. When unoxidisable or hard oxidisable substances were introduced, like glass, gold, &c., detachment did not ensue, but it always followed the introduction of easily oxidisable metals, on account of the structural changes produced by them in the vitreous. The injection of certain chemical substances produced like results. Perforation of the retina was always the first symptom of detachment, so that to it may be traced the ensuing detachment, as it permits the vitreous to penetrate behind the retina.

In most of the recent cases observed in which the detachment had rapidly developed, a similar condition was found, as in eleven out of fifteen cases the perforation could still be easily recognised, and in three only could not be traced.

Out of twenty-seven cases of chronic detachment the perforation was still visible in fourteen, in five it was doubtful, and in eight the investigation failed.

The rupture of the retina is therefore due to traction from within. If this be true all attempts to cure detachment by removing the fluid from behind the retina by operation, &c., must fail.

Professor Schweigger, of Berlin (*Arch. Ophthalmol.*, Vol. XI., p. 451), says the opinion of Leber that detachment is produced by laceration of the retina appears quite probable in many cases; yet he would not ascribe so great influence to shrinkage of the vitreous as Leber does in his paper.^a The retina, he thinks, may tear even if the vitreous is normal, and rupture from shrinkage he has never been able to confirm ophthalmoscopically. Moreover, according to his observations, the edges of the perforation, with their tongue-

^a Since reading Leber's paper I have carefully looked for rupture of the retina in cases of detachment, and have observed two very well marked cases (one was shown as a living specimen at the Academy of Medicine in Ireland). In both the edges of the perforation were rolled *inwards*, as observed by Leber.

like shreds, are rolled outwards, whereas a traction from the vitreous would roll them inwards, in the way observed by Leber.

PATHOLOGICAL CHANGES IN THE RETINA IN SOME CONSTITUTIONAL DISEASES.

Dr. Possadsky, of St. Petersburg, has given special attention to this subject, and arrives at the following results:—

1. In all forms of typhoid fever there is hyperæmia of the retinal blood-vessels, and granular opacity of the 3rd, 5th, 7th, and 9th retinal layers (of different intensity in the different kinds of fever).

2. In chronic pneumonia: hyperæmia, hypertrophy of the connective tissue, granular opacity of the 3rd, 5th, and 7th layers, and occasional pigmentation of the stroma of the ganglion cells.

3. In croupous pneumonia: serous infiltration of various parts.

4. In peritonitis: hyperæmia, infiltration of the tissue with white blood-corpuscles and opacity of the 3rd, 5th, and 7th layers.

5 and 6. Meningitis and pyæmia: hyperæmia with extravasation, blood corpuscles, infiltration of the tissue, opacity of the 3rd, 5th, and 7th layers (less marked in pyæmia).

7. In uræmia: hyperæmia with extravasation, cellular infiltration of the tissue, slight haziness of the nervous elements. When the ureters were ligated: serous infiltration of the retina.

8. In chronic alcoholism: hyperæmia with extravasation and cellular infiltration, hypertrophy of the connective tissue, coarse granular opacity of the 3rd, and fine granular opacity of the 5th and 7th layers.

9. In jaundice from cirrhosis of the liver: hyperæmia, hypertrophy of the connective tissue, and fine granular opacity of the 3rd, 5th, 7th, and 9th layers.

10. In pleuritis and pericarditis: no changes in the retina.

COLOUR VISION.

Dr. Charles Oliver (Philadelphia), in a preliminary paper on the determination of a standard of colour-sense for reflected colour by daylight (*Archiv. Ophthalmol.*, Vol. XI., p. 65), gives the results of his investigations. His method consists in exposing known *areas* of reflected colour to an eye placed at a designated distance; this he does by means of an instrument of his own devising. His method therefore differs essentially from that proposed by Ole Bull (of Christiania), where squares of colour, of the

same size, but of different degrees of saturation, are exposed in regular order—each row of colours having its degree of saturation expressed by a number, so that the acuity of colour-sense could thus be numerically expressed.

By Dr. Oliver's method also the acuity could be expressed numerically. His endeavour was at first to establish a normal standard of colour-perception for five metres distance. His conclusions so far arrived at are—

1. The standard of quantitative colour-perception for reflected *red* by daylight at five metres is $2\frac{1}{2}$ millimetres.

2. *Idem* for *green* is $10\frac{9}{16}$ mm.

3. „ „ *violet* „ $22\frac{9}{16}$ „

4. „ „ *blue* „ $8\frac{1}{2}$ „

5. Each colour passes through a regular series of changes before being correctly seen.

6. All other conditions being equal, no two individual eyes possess exactly the same amount of quantitative colour-perception for reflected colour. *Hence, a standard of colour must be used.*

The changes through which each colour passes are—

For *green*: first, bluish, then light blue, greenish blue, light green, pure green.

For *violet*: dirty gray, lighter gray, yellowish, yellow, pinkish, violet.

For *red* and *blue*: no sequence.

MYOSURIC URINE.

UNDER the above title M. Denancey describes a kind of urine which must have attracted the attention of those of our readers accustomed to make urinary examinations. The following are the physical characteristics of such urine:—It has a strongly reddish-yellow colour; has a specific gravity which oscillates between 1025 and 1029; does not contain any sugar; is but slightly acid; blackens silver vessels in which it is boiled, and is coloured brownish by the cupro-potassic test. He finds, further, that it has the property of decolourising iodide of starch, which is due to the unoxidised sulphur in the large quantity of extractive contained in it. M. Denancey thinks that this condition of the urine is a pathological state related to diabetes, and he therefore proposes to name it *myosuric diabetes*.—*Med. News*, March 31.

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. BANKS, M.D.
General Secretary—W. THOMSON, M.D.

OBSTETRICAL SECTION.

President—JOHN DENHAM, M.D.
Sectional Secretary—WILLIAM C. NEVILLE, M.D.

Friday, February 23, 1883.

The PRESIDENT in the Chair.

Exhibition of Specimens.

DR. J. S. POOLE showed, for Dr. Kidd, the uterus, heart, and lungs of a puerpera who died suddenly on the sixth day. The *post mortem*, conducted by Mr. P. S. Abraham, showed a small abscess at the junction of the right Fallopian tube with the uterus, opening into the peritoneal cavity. Here the vermiform appendix and an epiploic appendage were seen adherent. The right ventricle of the heart was largely transformed into fat, the left ventricle hypertrophied, with but little degenerative change; the valves and auricles healthy. A large clot was seen *in situ*, completely blocking a primary branch of the right pulmonary artery for about $1\frac{1}{2}$ inches.

DR. J. S. POOLE also exhibited an anencephalous foetus, the second-born of slightly premature twins, the first of which was born healthy and living.

DR. J. R. KIRKPATRICK showed a uterus and appendages with large fibroid tumour in the anterior wall.

DR. WM. C. NEVILLE, Sectional Secretary, exhibited, for Dr. H. Macnaughton Jones:—(1) Foetus and placenta of sixth month, in which delivery, complicated by deformed pelvis and transverse presentation, was effected by version, with removal of detruncated head by perfora-

tion and craniotomy forceps. (2) A large fibroid polypus, which sprung from the cervix uteri, and filled the vagina. It was removed by the ecraseur and obstetric forceps, with perinæal laceration. There was also a dermoid tumour of bladder from the same patient. (3) A unilocular ovarian cyst and a multilocular ovarian cyst, both removed by operation.

Living Specimens.

MR. STORY showed a patient who had a symmetrically placed supernumerary finger growing from each hand. A brother had a similar deformity.

Communication.—Metria.

DR. ATTHILL read a paper on "Metria" (so-called puerperal fever). He commenced by saying that our knowledge of the various affections included by the Registrar-General under the term "metria," still far from perfect, had of late been steadily increasing. It was now all but universally conceded (1) that there is no such single disease as puerperal fever properly so-called—that is, a specific disease in the same sense as scarlatina or smallpox; (2) that inoculations and absorption of septic matter conveyed from without formed a not infrequent cause of one form of metria—viz., puerperal septicæmia; and (3) that puerperæ frequently become self-inoculated by poisonous material generated within their own bodies either by the decomposition of retained clots or shreds of membranes or placenta, the resulting fever being by some called puerperal sapræmia in contra-distinction to septicæmia. He held that the septicæmic form of metria could only be communicated from one puerpera to another by the actual transfer of the pathogenic matter either by the hands of an attendant, the nozzle of a syringe, sponges, napkins, &c., but not by the medium of the air. To two points he drew special attention—the frequent occurrence of metria in puerperæ who are preyed upon by remorse or mental distress, and the occasional outbreak of a very fatal, infectious and essentially epidemic, form of metria, which he believed could not be due to septic absorption. The influence of remorse and mental distress in predisposing to the disease was well seen in the high mortality attending puerperality in women who had been seduced; and if such cases were excluded, he thought that the mortality of the Rotunda Hospital would only amount to one-half its present rate. Here fretting and a quickened pulse were the earliest symptoms of danger, a severe form of metria manifesting itself after twenty-four hours. These cases of metria were usually due to self-inoculation, the putrid matter finding a ready inlet because of the deficient *post partum* contraction of the uterus seen in such patients. Occasional outbreaks of an epidemic and very infectious form of metria were also known to occur, the disease spreading widely among the inmates of an hospital. He could not accept

Dr. Ivory Kennedy's explanation of these outbreaks as due to the aggregation of puerperæ, nor could he admit of their septic origin, since septic material was not communicable through the air. He held rather that these outbreaks, occurring simultaneously with epidemic or other zymotic fevers, were really examples of these zymotics, specially modified by the physiological state of puerperal women. The infection of erysipelas could thus induce an attack of infectious metria in a puerperal woman, while conversely such a form of metria could impart erysipelas to her offspring. In the same way, scarlatina grafted on a puerpera might result in metria, and not in scarlatina. This infectious form of metria, tending to assume an epidemic character, was therefore to be considered as consisting of specially modified cases of the prevalent zymotic disease. As strengthening this view, Dr. Atthill noticed the fact that, in his experience, bronchitis or pneumonia, occurring in a puerperal patient, was likely to be complicated by abdominal symptoms of the same kind as those which were seen in puerperal septic fevers. These views he exemplified by a history of such an epidemic of infectious fever occurring in the Rotunda Hospital in August last, and which, in the author's opinion, depended for its origin and infectious character upon an imported case of typhus fever in a puerperal patient. The outbreak was completely stamped out by closing and thoroughly disinfecting the hospital for a fortnight. The severe symptoms and rapidly fatal course of this epidemic form of metria differ essentially from the more insidious and less painful progress of puerperal septicæmia, on the characteristics of which he dwelt at length, emphasising the good prognostic import of a furred as opposed to a glazed and cracked tongue during its progress. Diarrhœa, he thought, was in such cases by no means to be considered an unmixed evil. In discussing the treatment of the different forms of metria, he observed that, while all but useless in the epidemic form, it was often of great service in the septicæmic cases. He formulated the following conclusions, as founded on his experience:—(1) That a disease of a highly infectious nature, differing essentially in its symptoms and course from that the result of septic poisoning, and capable of being propagated in the same manner as other zymotic diseases, occurs from time to time among puerperal women; (2) that this disease originates from the introduction into the system of a puerperal woman of the infection of some well-known zymotic disease, such as erysipelas, scarlatina, typhus, and probably typhoid fever, the action of the infection being modified by the peculiar state of the system and of the blood which exists in puerperal women, and that it therefore develops in them an apparently totally different disease; and (3) that the disease thus originating can be stamped out with as great ease and by the same means as are known to be efficacious in the case of ordinary zymotic diseases. He was satisfied, however, that the majority of cases of so-called puerperal

fever are the results of septic poisoning, such form of the disease not being capable of spreading through the air.

DR. M'VEIGH stated he had seen a case in which nervous shock from the sudden news of the Phoenix Park murders had seemed to him to be the exciting cause of puerperal fever.

DR. POLLOCK had lately been called to see two cases of fatal metria occurring one after the other in the same district, and attended by the same midwife. Both began soon after labour as an erysipelatous rash over the gluteal regions, and he subsequently learned that the midwife's daughter was suffering from erysipelas during the time in her own house.

DR. HENRY KENNEDY had formerly seen many cases in the Rotunda Hospital in which the sickness had preceded labour, and he had made *post mortem* examinations in many fatal cases. He usually found the inner surface of the uterus in a state of slough, with but slight appearance of peritonitis. The tissues mostly attacked were the cellular tissues, which, commencing in the pelvis, and spreading up behind the kidneys, were always in a state of complete slough.

DR. FRAZER recommended that hands, instruments, &c., used about a puerpera should be cleansed first in a solution of Condyl's fluid, and then in one of oxalic and sulphurous acids.

DR. KIDD recognised the epidemic and the septicæmic or pyæmic forms of the disease. He had long been aware of the former as distinct from the latter. It usually began outside hospitals, and spread into them. The last epidemic in the Coombe Hospital had followed only after the disease had been everywhere prevalent around them. At the same time typhus was very prevalent, the Hardwicke Hospital being unable to accommodate it, and other hospitals being proportionately full. The cases of epidemic metria were very rapid, very fatal, and commonly showed symptoms of the disease before or during labour. He had recently been consulted about a lady who had contracted this form of puerperal fever before labour, and who had only survived delivery by a little more than twenty-four hours. She exhibited well-marked puerperal symptoms, abdominal pain, tenderness, vomiting, diarrhœa, and fever. Dr. Atthill had succeeded in stamping out the outbreak which he had described so easily that he (Dr. Kidd) felt some difficulty in thinking that those cases depended on epidemic rather than on local causes. He had always found it very difficult to eradicate a genuine epidemic of metria. During the last Coombe epidemic that hospital was closed and thoroughly disinfected, yet on reopening the epidemic again broke out. Again the newly-admitted labour patients were transferred to the entirely separate gynæcological hospital which was fitted up for them. There fever also appeared, and deaths occurred; nor did re-admission into alternate beds into the freshly disinfected and white-washed labour wards put a stop to the epidemic, which died slowly away

of itself. These facts seemed to him to show that it was not hospitalism which sustained the outbreak. This form often occurred concurrently with epidemics of scarlatina and erysipelas, but he could not state the exact relation between them. When a certain epidemic constitution prevailed, all sorts of zymotic diseases flourished. He did not accept Dr. Atthill's view, that these different diseases could result in one another—that if they sowed typhus, they would reap scarlatina or metria. As in cholera first cases of the epidemic were most virulent, after a time some and then more patients beginning to recover. The majority of septicæmic cases were, he believed, autogenetic.

DR. MACAN said that of late the belief had been gaining ground that this disease arose simply from septic poisoning. He regretted to see Dr. Atthill subsiding into another belief. The connexion between puerperal fever and such other fevers as scarlatina was not proved, and led only to confusion. On the other hand, it had been clearly shown that there existed a close connexion between it and erysipelas, amounting almost to proof that it was, as Virchow had said, a kind of internal erysipelas. When puerperal fever occurred in an hospital, it was carried in a variety of ways from patient to patient, and thus the epidemic broke out. The difficulty of then getting rid of the septic poison became very great. The disease was easily carried, and in this way spread. He disbelieved in the miasmatic theory of its spread, and held that auto-infection was very rare compared to hetero-infection. The puerperal wounds were closed before the lochia or retained membranes were likely to become fœtid. Treatment of acute septicæmia was almost hopeless, though he employed antiseptic washings of the uterus. Prophylaxis was chiefly to be regarded. Doubtless the capacity for absorbing septic poisoning was greatly influenced by the nervous condition of the women.

DR. NEVILLE (Secretary) had difficulty in accepting Dr. Atthill's view that prevalent zymotics might give rise to a peculiarly epidemic form of metria. If typhus or scarlatina gave rise to puerperal fever, he saw no reason why lying-in hospitals should ever be healthy, since the students attending them daily attended also the fever wards of general hospitals. The general practitioner also attended all sorts of cases, including midwifery, and although it might be so, it had not been proved that his midwifery mortality was on that account above the average. Could puerperal fever itself, derived from scarlatina, infect a third person with scarlatina? Such a case would never be recorded. The majority of cases attacked during an outbreak were primiparæ—a fact which could be foretold on the septic theory, but which could not be explained on the modified zymotic one.

DR. ATTHILL, in reply, said that Dr. Kidd had observed cases in which women had been attacked by the fever before labour. He thought that in such cases the fever was caused by the infection of scarlatina, typhus,

or erysipelas, specially modified by the woman's physiological condition. He did not say that all these diseases had a common virus, but he did believe that they might all cause an epidemic form of metria. This form of the disease, he did not think, was more frequent in primiparæ than in others. He believed it spread equally through an hospital, as in the example he had given. It was quite distinct from the septicæmic form, which chiefly attacked primiparæ, and of which 75 per cent. of cases were autogenetic.

The Section then adjourned.

SURGICAL SECTION.

President—JOHN KELLOCK BARTON, M.D., President R.C.S.I.

Sectional Secretary—WILLIAM STOKES, F.R.C.S.I.

Friday, March 9, 1883.

The PRESIDENT in the Chair.

Communications.—1. *Spontaneous Dislocation of the Hip ;*
2. *Spinal Injury and Muscular Atrophy.*

1. MR. KENDAL FRANKS read a communication on spontaneous dislocation of the hip, illustrated by two cases which he had himself observed. Malgaigne, he said, has divided pathological luxations into two classes—first, simple luxation, in which, excepting alterations produced by the effect of time, the articular surfaces have not been attacked by the disease; and secondly, complicated luxations, in which the articular surfaces are essentially altered. To the former of these Volkmann has applied the term “Distensions-luxationen,” and to this form alone Mr. Franks alluded under the head of spontaneous dislocation. In reviewing the causes of these dislocations, a relaxed and distended state of the ligaments must be recognised as a condition which is invariably present. Hence the causes operate primarily in bringing about such a condition. These are—(1) traction; (2) pressure; (3) paralysis; (4) muscular contractions; (5) essential causes (Malgaigne); (6) hydrarthrosis, pyarthrosis, &c. The first case recorded was an example of that form to which Malgaigne has given the name of essential relaxation, because absolutely nothing is known of its nature. In this form a joint “loses its solidity,” and dislocation results without the preëxistence of any mechanical distension, without inflammation, and, most frequently, without pain. A child, aged five, was admitted into the Adelaide Hospital in January last. She had been confined to bed since the summer of 1882, suffering from acute

disease of the left hip-joint. The acetabulum had chiefly suffered, and the head of the femur had probably passed partially through it, and in that position ankylosis had taken place. An abscess which had formed burst into the vagina and healed up. The limb remained permanently fixed in a semiflexed position, abducted and rotated outwards. The child had been chiefly lying on this side, the right leg flexed, adducted and rotated inwards, so that the knee lay behind the knee of the diseased limb. In August last, as she was being turned in bed by the nurse, a remarkable protuberance was seen beneath the right anterior superior spine of the ileum. The child was questioned about it, but could not give any account of how it occurred; it gave rise to no pain. This protuberance was caused by the great trochanter, the head of the right femur having slipped out of its socket, and being easily felt on the dorsum of the ilium. No alteration in the parts has since taken place. The second case illustrated a dislocation of the hip, taking place during an attack of acute rheumatism. A girl, aged fifteen, was admitted into the Adelaide Hospital on the 10th of October last, suffering from necrosis of the left tibia. She presented a well-marked dislocation of the right femur on to the dorsum of the ilium, the limb being shortened to the extent of $3\frac{7}{8}$ inches. In May, 1869, she had an attack of acute rheumatism, from which she completely recovered. In the following February (that is two years ago) she was attacked again with the same disease, which kept her in bed for ten weeks. The right hip-joint and the right shoulder were the parts chiefly affected. To alleviate the pain pillows were placed under the hip and knees. When she tried to get out of bed, after the disease had subsided, she found the right limb considerably shortened, so that she could only reach the ground with the ball of the foot. The right hip was deformed; and she now presents all the characteristic signs of a well-marked dislocation. The head and neck of the bone can be easily identified in their new position, and feel quite smooth and healthy. Casts of these two cases were exhibited.

DR. HENRY KENNEDY called attention to a remarkable case of an athlete who, two years ago, exhibited himself before the Pathological Society, dislocating at will his hip and several other joints. The muscles were exceedingly well developed and powerful as in ordinary health.

MR. STOKES instanced another remarkable case formerly under his care in the Richmond Hospital, in which a fall was apparently the exciting cause. The patient fell down stairs, sustaining a very severe injury, but he did not apply for advice till a fortnight had elapsed, when it was found he had sustained a dislocation on the dorsum of the ilium, which was with very little difficulty reduced by manipulation. Next day, to Mr. Stokes's surprise, dislocation again occurred, and was reduced; but luxation recurred three or four days in succession. He suggested, in explanation, that fracture of the rim of the acetabulum had taken place

originally, and portion of the bone was driven away from its normal situation at the time the luxation recurred.

DR. BENNETT thought that too much importance was attached to the term "spontaneous." All pathological dislocations were spontaneous. A more important division would be as to whether the dislocations were complete or incomplete. The term "spontaneous" was a mistake for want of observation. Patients suffering from febrile phenomena were sometimes discovered, at the end of an illness, to have a dislocation complete or incomplete, but probably complete, and to which the febrile symptoms were referable instead of being general. In the deformity in question he would not be surprised if the bones were still intact, but altered in shape.

MR. WHEELER remarked that Prof. Dittel, quoted by Mr. Franks, had stated that without relaxation of the ligaments spontaneous dislocation occurred—for instance, dislocation of the hip following recovery of dislocation of the knee-joint; but whether complete or partial dislocation it was not stated.

MR. FRANKS replied, concurring in Mr. Stokes's explanation of the ease he had cited. In reference to Dr. Bennett's criticism of nomenclature, he confessed he had had difficulty in choosing a title for his paper. Perhaps it would have been better had he described the dislocations as simple spontaneous dislocations, to distinguish them from disease of the articular surface. He agreed, however, with Malgaigne that the best line of distinction to draw was between dislocations due to simple relaxation of the ligaments without any disease of the ends of the bone, and cases in which there was caries or some other disease on the head of the bone. Dislocations that occurred from distension of the ligaments formed a distinct group.

2. DR. R. M'DONNELL brought before the Section notes of three cases of injury of the spine, followed by progressive muscular atrophy. In all three cases there was little, if any, loss of sensibility. The patient was sensitive to tactile and thermic impressions. The wasting of the muscles was rapid, and set in early after the injuries. The character and appearance, as well as the marked degree in which individual muscles were attacked, showed, in the author's opinion, that muscular atrophy in these cases depended upon the same causes which produce individual muscular atrophy in infantile paralysis, and paralysis of the Duchenne-Aran type—viz., myelitis, affecting the large motor nerve-cells in the anterior cornua of the spinal cord.

The PRESIDENT inquired what were the conditions present in the case that recovered.

MR. SWAN, referring to the same case, asked the author if he believed that there was regeneration of the cells in the anterior horns.

DR. BENNETT assumed that the object in bringing forward the cases was to establish the spinal origin, as distinguished from that attributed by Roberts and Cruveilhier—*i.e.*, localising the origin of the disease in pathological change in the spinal cord. That muscles were the prime organs in fault could be supported by a number of cases. Those of traumatic origin went to establish that the lesion was primarily of the spinal cord. Fifteen years ago a man was under the care of Dr. Fleming, in the Richmond Hospital, presenting phenomena exactly the same as in the photograph handed round, and the cause of the lesion was a blow of a steamer's hawser. Having made the *post mortem* examination himself, he could say the lesions of the spinal cord were sufficiently overt and distinct to be recognised.

MR. WHEELER mentioned a well-known case that was in the City of Dublin Hospital, under the care of Professor Purser, suffering from Cruveilhier's palsy. The patient was a tall gaunt man, who used to stand at Baggot-street bridge, and had been driver of the Wicklow coach. His upper extremities were only held to his trunk by the levator anguli scapulæ muscles, so that the posterior superior angles of his scapulæ were pulled up close to his ears. He stood with his body thrown backwards, to prevent his abdominal viscera from falling forwards, as all the abdominal muscles had disappeared. The palsy apparently originated from injury. He fell, and hurt the back of his neck and spine. From the cast shown by Dr. M'Donnell it seemed that the flexor brevis, abductor and opponens pollicis muscles were very much wasted. He asked could Dr. M'Donnell assign any reason why the flexor ulnaris muscle and other muscles were not wasted in the same proportion, and if he had made observations in similar cases of the condition of the nerves down the forearm as to whether their motor fibres were altered. With regard to Dr. M'Donnell's second case it appeared to him (Mr. Wheeler) that the trophic cells were not engaged, but only the connective-tissue elements, and when it returned to its normal condition the temporary influence it exercised on the cells ceased.

DR. M'DONNELL, answering Mr. Wheeler, first as to how the particular muscles atrophied, said in all of those that belonged to the group he was speaking of, it commenced in the spinal cord. If a group of those cells disappeared, it might be laid down as certain that the muscle corresponding with that group of cells would also disappear, and the nerves leading to that would wither away. In those cases which he had examined the nerve fibres in the roots were found to be atrophied. The question was naturally asked—"Might it not begin in the muscle?" or, as Cruveilhier put it, in the nerve-root, or in the trophic cells? Years ago he had himself asked Lockhart Clarke if he had had an opportunity of examining cases in which, long after amputations, those cells had not been called into use, and whether, for want of use, they had become atrophied.

It appeared that in fifty or sixty which he had examined in Greenwich Hospital the cells in the spinal cord were found to be right. Evidence had been accumulated to show that the disease really began in the nerve-cells and spinal cord. As to the pathology of the successful case, he did not see how it could, clinically speaking, be distinguished from the others, the patient presenting exactly the same appearance; but he was inclined to regard all inflammatory action attended with atrophy as a matter of degree.

The Section adjourned.

PATHOLOGICAL SECTION.

President—J. M. PURSER, M.D.

Sectional Secretary—E. H. BENNETT, M.D.

Friday, April 6, 1883.

The PRESIDENT in the Chair.

Specimens Exhibited by Card.

MR. P. S. ABRAHAM—Colloid-like bodies in the medulla and cerebellum from a case of diabetes. SURGEON-MAJOR HAMILTON—Three specimens of typhoid lesions; ulcers in the ileum. MR. THOMSON—Multiple fractures of the lower jaw. DR. WALTER SMITH—Abdominal aneurism. DR. PURSER—Atheroma of aorta; endarteritis deformans. MR. J. DAVISON and MR. P. S. ABRAHAM—Bones of young lower animals after fracture, showing increase in size. DR. J. M. REDMOND—Spontaneous aneurism of the brachial artery; heart showing deposit on aortic valves.

Hemiatrophia Facialis.

MR. JOHN B. STORY exhibited a young man, aged twenty-one, suffering from this deformity upon the right side. The patient's mother stated that the defect was congenital, and had been caused by a fright early in her pregnancy from a guinea-pig being thrust into her face. In favour of this theory there was an undoubtedly congenital deformity of the right auricle upon the same side. In the atrophy all the tissues, skin, muscle and bones were involved, the skin atrophy being best marked over the eyebrow, and of the bones the superior and inferior maxilla being most implicated.

DR. MACSWINEY asked whether the man was idiotic, or whether he had been delivered at his birth with forceps, and MR. STORY replied in the negative to both questions.

Abdominal Aneurism.

DR. WALTER SMITH exhibited an abdominal aneurism taken from a man, aged thirty-eight years, who died on the 10th ult. The immediate cause of death was an acute pleuro-pneumonia on the right side. The aneurismal symptoms first declared themselves about two years and three months before his death by pains in the back, which gradually increased in severity until he was obliged to give up work and seek admission to hospital. Below the ensiform cartilage could be seen and felt a tremulous pulsation attended with a loud systolic murmur, audible as low as the umbilicus, and posteriorly along the spine from the eighth dorsal to the second lumbar vertebra. In December last an eccentric impulse was detected under the twelfth rib on the left side, and about the middle of February he was seized with intense pain in the right hip, thigh, and leg, and from this date he rapidly sank. The autopsy showed that the right lung was consolidated; weight, 3 lbs. 10 ozs.; abundant flaky lymph on pleura. The left lung was healthy; weight, 1 lb. 12 ozs. A large saccular aneurism sprung immediately below the diaphragm, and extended to within an inch of the bifurcation of the aorta, and laterally from one kidney to the other. Extensive erosion of eleventh and twelfth dorsal vertebra and first lumbar vertebra; eleventh and twelfth ribs on left side detached from the spine and adherent to the sac. The sheath of right psoas muscle was the seat of a large fusiform diffuse aneurism communicating freely with the main sac. Abdominal viscera healthy.

DR. H. KENNEDY remarked on the exceptional mode of death in this case, and discussed the diagnosis of aneurism of the abdominal aorta and cancer; and DR. SMITH replied.

Dysidrosis.

MR. CORLEY read a paper on the disease to which Tilbury Fox applied this name, and which Mr. Jonathan Hutchinson termed cheiropompholyx. He detailed the history of two cases, both following injury of the median nerve, and in one of which after the eruption had disappeared from the hand of the injured side a similar eruption broke out on the opposite hand. This, he considered, indicated that the irritation produced in the member first affected was propagated to the spinal cord, and produced there a nervous disturbance which passed across and down the nerves of the opposite limb. From the consideration of these cases, as well as those detailed by Hutchinson and Fox, Mr. Corley was of opinion that the disease was genuine herpes zoster of the hand, due to either centric nervous disturbance or irritation of nerve trunks, and he therefore rejected the name and pathology suggested by Tilbury Fox.

DR. WALTER SMITH discussed this communication, and illustrated his

remarks by the facts of a case recently observed by himself; and MR. CORLEY replied.

Atheroma of the Branches of the Pulmonary Artery.

DR. PURSER showed an example of extensive atheroma of the branches of the pulmonary artery. The primary trunk was free from disease, but the smaller divisions of the vessel were much affected. The aorta was healthy. The right ventricle was greatly hypertrophied without much dilatation. There was chronic pneumonia of both lungs. The patient was a middle-aged woman, who died almost immediately after her admission into hospital before any history could be obtained.

The Section adjourned.

THE TREATMENT OF PUERPERAL SEPTICÆMIA.

DR. GAILLARD THOMAS, in some remarks on this subject, reported in the *N. Y. Med. Jour.* of March 31, 1883, says that puerperal septicæmia, with our present light on the subject, should be treated in the following manner:—First, wash out the uterine cavity completely with some anti-septic fluid; second, quiet all pain by opium; third, get the peculiar influence of quinine upon the nervous system; and, fourth, keep the temperature, at all hazards, at or below 100° by the methods which we now possess. Dr. Thomas believes that the dangers attending the use of the injections are counterbalanced by the benefits to be derived. He does not think there is the least probability that air will be introduced if a tube of large size—as large as the finger—is used. But when a catheter is employed there is some danger of inserting it into a sinus and introducing air and fluid together directly into the vessels. In a case in point the uterus was washed out with carbolised water every three hours, opium was freely administered, ten grains of quinine were administered every eight hours, ice-water was passed through a coil of rubber tubing placed over the abdomen; and as long as this treatment was kept up the temperature did not rise above 101° or 102°; but as soon as they ceased to wash out the uterus the temperature at once rose to 104°, and at times to 105°. On the 16th day after delivery, the tenth day after the commencement of the high temperature, the intervals between the uterine injections were extended from three hours to four, then to five, six, and seven hours, and finally they were discontinued altogether, and at the same time the administration of quinine was given up and the coiled tubing was taken off. Opium was continued in small doses for a while longer, and the patient recovered entirely.

PROCEEDINGS OF THE COUNTY AND CITY OF CORK
MEDICAL AND SURGICAL ASSOCIATION.

A Case of Tape-Worm, with Remarks on the Treatment. By C. YELVERTON PEARSON, M.D., M.Ch.; Senior Demonstrator and Lecturer on Anatomy, Queen's College, Cork; Assistant-Surgeon to the Cork North Infirmary, &c.

MR. PRESIDENT AND GENTLEMEN,—I have been induced to bring the following case of tape-worm under your notice, partly because I think the case presents some few points of special interest, and partly because I believe that there are some particulars in connexion with both the diagnosis and treatment of tape-worm that have not received the general amount of attention they deserve.

A. M., a lady, aged sixty, of robust constitution, on December 10th, 1878, told me that she had been suffering from an occasional pain in the left lumbar region, which she described as a “gnawing sensation,” and stated that three weeks previously she had noticed some white things about an inch long in her stools, and that they had been increasing in numbers ever since. I asked if she remembered having eaten any bad meat previously; and she said (on thinking) that she had eaten some pork which she thought disagreed with her, about two or three months before. Believing the case to be one of *tænia solium*, I asked if she could take castor oil, and, as she said she would prefer anything else, I ordered:—

R. Ext. Col. co., gr. iv.
 Pil. Rhei co.
 Pil. Hyd. āā, gr. viii.
M. Divide in pil. iv.

Two to be taken immediately; to take no dinner, but only some milk, and as little bread as possible during the evening; and to take the following draught on waking in the morning:—

R. Ext. Filicis Liq., ℥i.
 Mist. Amygdalæ, ad. ℥ii.
M. Fiat haustus.

To be followed, if necessary, by two more pills. These latter were not taken, as the tape-worm was expelled nearly in one mass about two hours after the draught was taken.

On examining the stool I found that there were twenty-five feet of *tænia-mediocanellata*, most of it in one piece, but a few short fragments. Although there was a considerable length of the narrow portion, no trace

of the head could be detected; consequently I could not feel easy as to the prognosis, but hoped for the best.

About a week after this the patient complained of a return of the "gnawing sensation," and said she was sure that there was a return of the worm. However, as I thought it might be only fancy (although the patient was by no means of an imaginative disposition), I gave her encouragement, in the hope that there might be no return; however, I was disappointed, as on February 12th, exactly two months after expulsion, segments reappeared. On the 19th the former treatment was repeated, and followed by a like result. Sensation of gnawing continued, and segments again appeared on the 22nd April. In a few days the treatment was again repeated, and the parasite was expelled on the 28th. In a fortnight after this, as the "gnawing sensation" continued in the left side, the lady asked to have something done; accordingly I ordered two pills to be taken in the morning, to be followed on the next, at 7 a.m., by a draught containing ʒi. of extract of male fern, and a similar one to be taken about 10 a.m., after a light breakfast of bread and milk. The only result that followed was tolerably free purgation; but there was no appearance of *tænia* in the stools.

In a few days after, as the "gnawing sensation" continued, and the patient still desired to have some further means taken to rid her of her visitor, I ordered an emulsion, containing ʒi. of turpentine. Except the motion of the bowels, this was followed by no result.

On July 21st segments again appeared, but as the patient was away from home, treatment was deferred till August 14th. On this occasion three draughts of extract of male fern were taken (each containing ʒi.), and were followed by expulsion.

On October 28th the patient was again treated, and the worm was expelled for the fifth time. The sixth removal took place on December 30th. The seventh on March 10th; in these three instances the treatment pursued was the same as at the first. On May 20th there was return of segments in the stools. This time I ordered ʒii. kamala instead of the fern; twenty-four feet came away, but no head was found; expulsion was delayed some hours later than on former occasions.

July 28th.—Segments again appeared, and I now determined to order larger doses of male fern than formerly; consequently, after the usual preliminary treatment—viz., pills and limited diet, I ordered two draughts, each containing ʒiii. ext. of male fern—one to be taken on waking, and the other three hours after. Soon after the second draught had been taken the parasite was expelled (which I now show you), the only unpleasantness occasioned being a slight tendency to nausea after the second draught.

I am happy to say that since then there has been no recurrence; and it is now over two years since the last expulsion.



MATURE SEGMENT OF TÆNIA SOLIUM.



MATURE SEGMENT OF TÆNIA MEDIO-CANELLATA.

Remarks.—The following are the points which are worthy of special reference :—

1. The patient in this case referred the cause to *pork*, although *tænia-mediocanellata* is said to be produced from the cystic form of parasite found in *beef*. I do not think any importance need be attached to this, as the patient may be under a mistake.

2. The great regularity of the time taken for full development after expulsion; being in each case almost exactly two months, or a little over.

3. The constant occurrence of the gnawing pain in the left lumbar region after each expulsion until cure was established.

4. The apparent uselessness of ordering anthelmintic until full development was attained.

5. The large doses required for cure. This is a point on which I wish specially to dwell. The dose of extract of male fern recommended in the "British Pharmacopœia" is from 10 to 30 minims; and not alone from my experience in this case, but in a few others also, I believe this dose to be quite inefficient; more especially in cases of *tænia-mediocanellata*, which is generally acknowledged to be a more difficult parasite to dislodge than *tænia solium*. I would not feel justified in ordering, on the first occasion, such a large dose as that given previous to the final expulsion in the above case—viz., three drachms; but I think we are certainly safe in giving from one drachm to one and a-half drachms, and repeating it in a few hours if the worm be not expelled in the meantime; and then, should a recurrence take place, we may increase the size of the dose, more especially if it had been well borne in the first instance.

There are some points in connexion with tape-worm in general to which I now wish to refer; and first, as regards diagnosis, I think it is of extreme importance that every practitioner should take the trouble to ascertain, whenever a case of tape-worm comes under his notice, the precise variety of parasite with which he has to deal. This can be easily done by a naked eye examination of the *proglottides* or mature segments, which are found in the stools; or, if the segments at the time of examination are too opaque, place one of them on a glass slide, let it dry, and then (as you see from this one I show you) all the necessary parts for examination become very distinct. The accompanying diagrams illustrate the means of diagnosing the two forms of worm we are likely to meet with in this country.

The mature segments of *tænia solium* measure half an inch in length, by quarter of an inch in breadth; have the genital pore on one or other lateral border, and midway between the anterior and posterior extremities; the elongated uterus has only from twelve to fifteen lateral branches. The segments of *tænia-mediocanellata*, on the other hand, are much larger, the length being one inch, and the breadth nearly half an inch; the genital pore, as in the former case, will be found on one or other lateral

border, but nearer the posterior than the anterior extremity; the uterus, which is elongated, possesses from thirty to thirty-five lateral branches on each side. *Bothriocephalus latus* rarely occurs in this country, but its segments are easily known, by being broader than long, having the uterus and its branches arranged in the form of a central rosette, and the genital pore on the surface.

My object in asking for this diagnosis is in order that we may be able to determine, by experience, the relative facility with which the different species of worm may be expelled, and also to ascertain if a particular drug may not be more effectual on one species than on another; for I regard it as quite possible that while one drug may be found more effectual in treating *solium*, another may have a greater effect on *medio-canellata*. So far as I am aware nothing has yet been determined in this direction.

Another thing worthy of notice is the undoubted possibility of a spontaneous cure. In the case of *solium* this has been explained by supposing that the hooklets fall off from the head; but this explanation will not hold good for other forms.

It is of great importance to remember that there is no such thing as a "partial cure." We either cure the patient completely, or leave the parasite behind, and remembering this, one is naturally led to ask—how are we to be certain of a cure in a case when the head is not found? In answer to this question Heller says:—"If the head be not found, we must adjourn the decision of complete cure for *three months*—if during that time no fresh segments have been expelled, we may conclude that the cure is perfect, as the worm only requires from eight to ten weeks to attain to full maturity."—(Ziemssen's Cyclopædia).

With reference to the other modes of treatment than those tried in the above case, I may mention one or two which have been specially recommended. Dr. Gordon (Surgeon to 10th Foot) says—"We prepared a spirituous tincture by adding Oj. of alcohol to ℥iv. of the powder of kamala, and then filtering; we never succeeded in obtaining more than ℥vi. in this way; and of this ℥i. in a little mint water was generally found to be a sufficient dose, ℥ii. being in some cases required, and perhaps in one or two ℥iii.; but I have never seen the remedy fail in removing the worm in a case where there were unequivocal symptoms of its presence."—(Aitken's Prac. Med.).

The following is Rosenthal's method of giving kousso—viz., in compressed balls or discs, which are coated with gelatine, which hide the smell and taste of the medicine; this method is specially recommended by Heller. I am not aware that it has been tried in this country; but had I known of it in time I should certainly have used it, as the only thing that prevented my administering kousso was that my patient objected to take the large and disagreeable dose required of the official infusion.

CLINICAL LECTURES ON DISEASES OF THE LOWER BOWEL.

By EDWARD HAMILTON, F.R.C.S.I.; Surgeon to Steevens' Hospital.

LECTURE IV.

THE term *Hæmorrhoid* has been employed since the time of Hippocrates to designate bleeding tumours, but has gradually become narrowed in its application to such growths in the vicinity of the anus, and the disease so common in this locality has in return given its anatomical title to the region. The etymology of the word "pile" is somewhat doubtful. By some it is regarded as signifying a little conical lump or heap of flesh; by others as referable to its pilous or villous surface. They have been variously classified, as into blind and bleeding, true hæmorrhoids, and hæmorrhoidal excrescences. Montegre has given a very elaborate classification, but as it is founded on various accidental conditions and complications of these tumours, it is cumbersome, and not of any real clinical value. The division into *internal* and *external* piles, accepted by almost all practical writers, is supported by anatomy, pathology, and clinical surgery. The pathology of external piles is not a subject of much controversy, as they are almost, by common consent, regarded as consisting of those abnormal dilatations of the veins to which the term varix has been applied—a condition which you find so frequently in the saphena vein of the leg, or those of the spermatic cord. There are good anatomical reasons why the radicles of the rectal veins should be thus affected. They run a long course before they terminate, they pass through simple slits in the sphincter muscle, they are destitute of valves, they are liable to mechanical pressure in the pelvis and by the protrusion of the part during the daily act of defæcation, and they are specially subject to periods of hyperæmia resulting from excitement of the organ in the immediate vicinity of the lower bowel. It may help to throw some light on this subject if we stop to inquire into the pathology of varicose veins in parts of the body where they are more easily recognised, and can be studied without complications. Andral, who has investigated these changes with great care, describes six different conditions constituting the varieties of varix—1st, simple tortuosity; 2nd and 3rd, tortuosity with thickening or thinning of the venous walls; 4th, with septa thrown partially across the canal; 5th, lateral pouches or offsets from the tube; 6th, where these pouches communicate by minute perforations with the surrounding areolar tissue. All of these changes may be met with in the veins of the leg, and many of them in

those of the hæmorrhoidal plexus. From natural causes we are very apt to have sudden rupture, with a minute extravasation of blood, which forms for itself a minute cyst. If one of these be laid open, you can turn out the clot, and see the cavity lined by a smooth and polished membrane—according to some authors the lining of the vein itself greatly distended; others, with greater reason, regard it as areolar tissue condensed by pressure. If they be permitted to take their own course, they will more than probably inflame and suppurate, or they will shrivel and degenerate with folds or tabs of skin like miniature dogs' ears. Mr. Ashton, in his valuable work on "*Diseases of the Rectum*," refuses to regard them as varices, on the ground that they could not recover their natural size after having been so much dilated and enlarged. Such return to normal size does not take place in varix of the saphena or spermatic veins. He regards external piles as constituted by extravasation of blood into the areolar tissue of the part, forming for itself a little capsule or cyst out of which we can turn the minute clot *without hæmorrhage*. This could not be done if the cavity was simply an expanded venule, or if it communicated with, or was an offset from, its tube.

In cases of long standing a section of such a tumour as delineated by Esmarch presents a spongy cellular mass of dilated veins, and bands of connective tissue.

It may reasonably be asked why do extravasations of blood in this special locality take on such an exceptional arrangement? This formation of a sac around a clot of extravasated blood does not take place in areolar tissue elsewhere. These blood cysts would correspond to Andral's sixth variety of varix.

The causes of hæmorrhoids, whether external or internal, are predisposing, which we have just considered, and certain exciting causes, which are well known—sitting on wet, cold ground, or damp cushions; straining at stool when the bowels are constipated; the use of drastic purgatives, of which aloes is said to be especially injurious, as, owing to its insolubility, its action is supposed to be delayed until it reaches the lower bowel. The action of aloes, however, appears to be specific, as the drug in solution appears to select the large intestine for its operation. One of the worst attacks of piles I ever saw was produced by a dose of castor-oil. Over-stimulation or obstruction in the genito-urinary apparatus is a frequent exciting cause of the disease. The habit of remaining too long at stool while the parts are exposed to damp or cold air may bring on the attack. In this way stricture of the urethra or stone in the bladder may act. The symptoms occasioned by external piles are such as we might *à priori* anticipate—a sense of fulness, with itching and smarting at the anus; a feeling as if a fragment of straw or other hard, sharp substance was lodged in the opening after defæcation. The discharge is usually followed by a few drops of blood, a globular

swelling of a deep purple or plum-colour is observed at the side of the anus, and at times there may be discharge of a considerable quantity of mucous, serous or sanguineous fluid, to which the older writers applied the term hæmorrhoidal flux. This flow usually relieves the symptoms by unloading the turgid blood-vessels. Pain of a dull, aching character is experienced in the back and loins, extending occasionally to the knee, and even to the ankle and foot ; trouble in walking, especially in warm, damp weather. Persons in whom piles have once formed are liable to paroxysms of such symptoms, which are commonly designated as “fits of the piles.”

The diagnosis of external piles is not difficult. They may, of course, be confounded with any of the excrescences to which we have alluded in a previous lecture. All that is required is, by a careful examination, to guard against the misleading statements of patients themselves, who designate troubles of every kind in the anal cleft by the name of piles.

The treatment required for external piles is simple enough when contrasted with that demanded by the internal form—rest in the horizontal position—cold, if it is applied continuously, as by a bladder of ice, will afford great relief. Warm stupes are often more convenient, and appear to give greater comfort to some patients, especially those who are advanced in life. They act by causing a general relaxation of the tissues. If the tension is great you may pass a sharp-pointed bistoury through the centre of the pile, and turn out the clot, thus expediting the natural process of cure. Leeches are sometimes of use ; they should be applied close to, but not on, the pile, and be followed by poultices of linseed meal.

When the more acute symptoms have passed away, astringents may be applied either as lotions or ointments. There can be no doubt that the old remedy, gall ointment, has established a very wide-spread reputation for the relief of those tumours. Combined with opium, as in the compound ointment of galls, it affords most beneficial results. Surgical operations are seldom required in the treatment of external piles, and they may be followed by unpleasant results. However, should they be troublesome, and the patient presses for their removal, you may snip them off with a bistoury or scissors. The bleeding can be easily controlled by ordinary means. You should, however, be very careful not to remove too much, and to distinguish between the true pile and the tabs of skin which so often lie external to them, or the mucous lining of the bowel, which is always more or less prolapsed. I need scarcely insist on the necessity of removing all exciting causes of the disease.

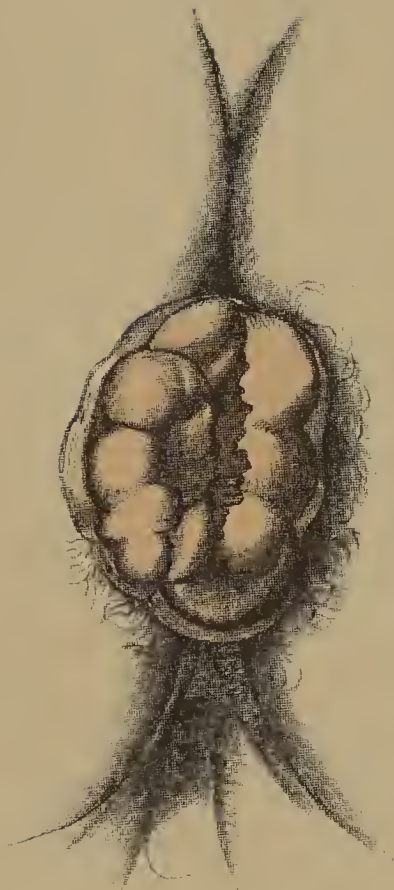
Much confusion and obscurity exists among systematic writers respecting the nature of internal piles. This may be in some measure accounted for by the fact that there are various kinds of tumours within the

sphincter, each of which has been described by individual authors as the only morbid growth to which the term should be correctly applied, as being the true type of the disease. We may clear away some of this confusion by defining accurately three forms of growths from the wall of the bowel, which must be regarded as three distinct varieties of the internal pile. The most suitable appellations seem to me to be—the *venous*, the *columnar*, the *nævoid*.

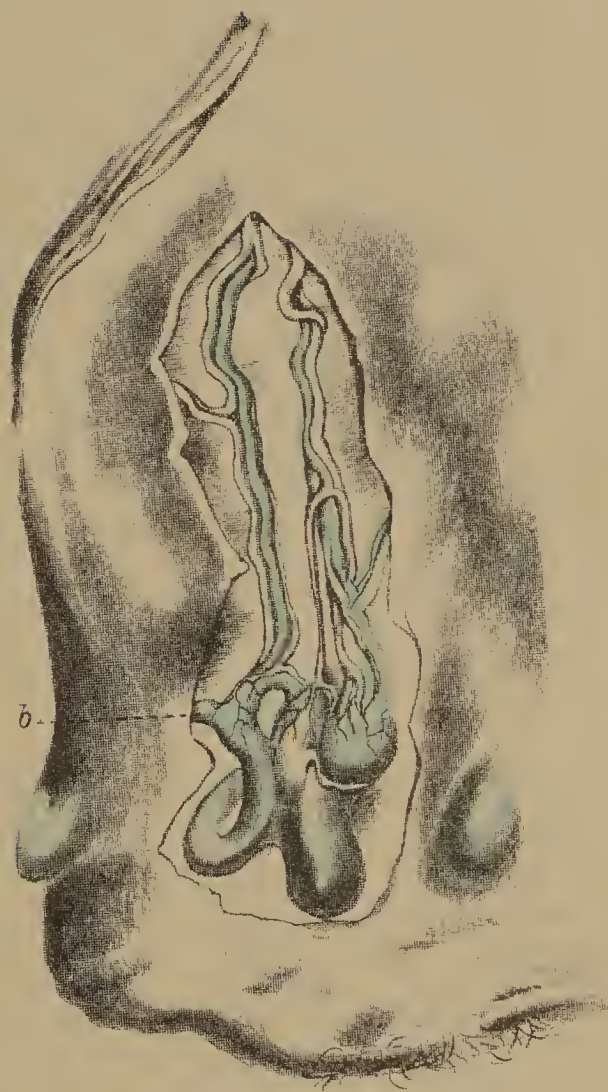
They first differ in no respect from external piles, except in their position, and would seem to correspond to the variety to which Mr. Bramby Cooper has given the title “extero-internal.” The veins of the hæmorrhoidal plexus above the sphincter are implicated, and being liable to be extruded during the act of defæcation, and to become constricted, they pour out blood in considerable quantity, and great pain is caused by the spasm of the muscle. When they are habitually protruded, the tone of the muscle is lost, and they escape through the anal opening on the least exertion, or even the upright position. They present the deep purple or plum-colour indicative of venous congestion.

The second variety, for which I would suggest the term *columnar pile*, to denote its pathology, consist essentially of hypertrophy of the folds of mucous membrane, to which I have drawn your attention, surrounding the anal opening, the pillars of Glisson. They have a red, almost vermilion colour, an elongated form, and contain within them one of the descending parallel branches of the hæmorrhoidal artery, to which I have drawn your attention. Hence, when they become ulcerated, they bleed very profusely, with bright arterial blood, which is often ejected with considerable force; it is seldom sufficiently elongated to protrude completely through the anus. The late Mr. Colles gives an account of the pathology of these tumours:—“On slitting up the rectum I saw three vessels, as large as crow-quills, running for some distance down the intestine, and then dividing into a number of branches. These vessels ramified very profusely, and each seemed, by interweaving of its branches, to form one of these tumours. The trunks and branches are covered only by the lining membrane of the intestine.” I may add that these vessels can very frequently be felt pulsating in the wall of the bowel, by the finger passed above the bulbous extremity of the pile.

The third form, or *nævoid*, has been described under the title “vascular tumour” of the rectum. Mr. Houston, in *The Dublin Journal of Medical Science*, has described these “vascular tumours” of the rectum. He says they may occur as a complication of ordinary varicose piles, on the surface of which they form a painful thickening or spongy mass, pouring out blood of a bright arterial colour, protruding through the anus, and causing dilatation of that opening, having a peculiar strawberry appearance resembling the conjunctiva in chronic inflammation. Another variety would appear to exist on the surface of the mucous



COLUMNAR PILE.



VENOUS PILE.

membrane independent of any other alteration of structure. This latter would appear to be the true nævoid pile, resembling morbid erectile fissure elsewhere. Mr. Houston gives us the caution that the pressure of the finger during examination is liable to cause the temporary subsidence of the tumour, and thus disappoint the surgeon.

This form of the disease is especially liable to attack persons of the so-called sanguine temperament, with florid complexion, light hair, and blue eyes. In such the capillary system appears to be specially developed, with a tendency to telangiectasis. Blood of a florid arterial colour is poured out in large quantity. This may assume a dark hue if retained in the bowel. This bleeding is sometimes alluded to as a salutary exhalation, and apprehensions have been expressed as to the result of its arrest. However the loss of venous blood may be borne by the system, there can be no doubt that the drain of arterial blood in such cases produces marked anæmia, and must be regarded as the reverse of salutary. The nature of the columnar and nævoid piles easily explain the danger which would attend the removal of either by simple cutting. The vessels which freely supply both these varieties would retract, and being placed in a loose, warm cavity, would continue to pour out blood in very considerable quantity, while their deep situation would cause great difficulty in dealing with them.

Internal piles may protrude at the anal opening, and becoming much congested, the sphincter being at the same time in a state of spasm, constitutes most distressing and truly painful strangulation. The patient, during this attack, can neither sit, stand, nor walk. The very idea of any action of the bowel is so distressing as to make the patient shrink from it continually. There is at the same time high fever, and occasionally the constriction proceeds so far as to cause the piles to slough, creating great alarm to the medical attendant and the patient's friends. Fortunately, however, this complication is not so formidable in its results as the local symptoms would lead us to suppose, or which we would be inclined to expect. The sloughing pile is readily detached, and the part heals with surprising facility—nature accomplishing, by this rude process, an effectual and usually permanent cure. In this irritation the organs in the vicinity sympathise very closely. The bladder is irritable, and the urine may be retained completely.

With reference to the diagnosis of internal hæmorrhoids, as the name implies, bleeding is a constant and a prominent symptom, but every case of blood-discharge from the bowels must not be too hurriedly attributed to piles without due and careful examination. It may proceed from any part of the canal higher up. In the child it is an important factor in the diagnosis of intussusceptio, or of rectal polypus, which has so many other symptoms in common. Prolapsus recti must be carefully distinguished from piles. They are constantly confounded in the popular

mind, and almost always co-exist. The treatment of internal piles may be either palliative or operative. The first differs in no respect from the method which we have laid down for external piles. There is, however, a plan of treatment which is more called for in the internal variety of the venous class, although beneficial in all forms of the disease. I allude to careful management of the bowels, not by the continual use of purgative medicines, but by bringing them under the all-powerful influence of habit.

Nothing is so important as to keep the bowels free. One costive evacuation will undo the work of months. For this purpose nothing is really better than the old electuary of sulphur and bitart. potash, with the addition of confection of pepper, or, if the bowels are obstinate, confection of senna. This medicine acts gently as a laxative, but yet efficiently. The confection of pepper, deduced from the celebrated quack nostrum, "Ward's Paste," has long had a great reputation in the treatment of piles, and many theories have been advanced to explain its action. The most rational one would appear to be that it acts as a powerful stimulant to the capillaries of the mucous membrane, and by causing rapidity of circulation relieves the congestion below. It has even been used as a local application (Sir B. Brodie alludes to a patient who "stuffed" his rectum with it), although one would regard it as likely to cause severe pain and smarting. As soon as the severe symptoms subside, the patient should be directed to use each morning an injection of cold spring water with the syphon enema tube. This acts beneficially in many ways:—1. The regular use of it entails the necessity of attending to the action of the bowels, at the same period of each day; and it is truly a matter of wonder how they can be thus brought to act with undeviating certainty. 2. The fluid serves to soften the evacuation and render it less irritating to the surface of the gut. 3. The cold acts as a direct tonic to the lining membrane, removing the tendency to prolapse or to hæmorrhage.

If this mode of treatment were adopted in time, and fully and regularly carried out, hæmorrhoidal disease would be comparatively rare.

The treatment of internal piles by surgical operation has always been beset with considerable difficulty, arising out of the very nature of the case and the surrounding conditions. The subject has, therefore, exercised the ingenuity of surgeons, and a great many suggestions have been made from time to time with a view to establish some safe, efficient, and at the same time facile operation. Abscission, ligature, cautery—actual or potential, hypodermic injection, ecraseur, and crushing, have each had their advocates.

The removal of internal pile by simple cutting instruments has undoubtedly often been followed by alarming and fatal hæmorrhage, and on that account has been almost completely abandoned; and yet

the late Mr. Colles regarded the danger of tetanus following ligature as greater and more imminent than that of hæmorrhage following excision. He practised this operation on what he describes as vascular tumour, and which he has found on dissection to be fed by an artery as large as a crow's quill. He thus describes his mode of dealing with them :—"The tumours having been made to protrude by means of a purgative injection, I direct my assistant to pass a hook, or common tenaculum, through one of the largest, while I seize another lengthways with a polypus forceps; then, drawing the tumour a little towards the axis of the gut, with a large pair of scissors, passed behind the forceps, I cut off all that portion which is engaged between its blades. I then proceed in the same manner to remove those tumours which the assistant holds transfixed by the hook. By fastening and drawing out the tumour with the forceps we much facilitate its removal by the scissors. Proceeding in this way I guard against these tumours being drawn up within the sphincter as soon as the first had been removed. I do not think that any case will require the removal of more than three of these tumours, and not unfrequently the cure will be ensured by cutting off two only of them. When the operation is finished the protruded parts generally retire within the sphincter. Should any part remain out it must be completely pushed in with the finger, in order to guard against hæmorrhage. I take care not to prolong my incision higher on the bowel than what I conceive will, when replaced, lie within the circle of the sphincter, for if we cut the gut higher up, this part, when returned, may bleed from not having any surface opposed to it. Besides, we know that by cutting higher up we are in danger of cutting the trunk of the vessel, instead of confining our incision to the tumour, which is composed solely by the convolutions of its very minute branches."

There can be no doubt that the bleeding from this limited wound could easily be controlled by ordinary surgical methods, and yet this success has not been attained in the hands of other surgeons, whether from cutting too freely or operating on a different variety of internal piles. Alarming, and too often fatal, hæmorrhage has resulted from this operation. It is, therefore, my duty to warn you not to adopt this method—at all events in the earlier part of your surgical career.

The ligature has long maintained its supremacy in the treatment of piles, and no method has yet been proposed which can completely supersede it, as there are still examples of the disease which cannot be mastered in any other way. The old mode of using it was painful in the extreme, and, carried out for years without the merciful aid of anæsthetics, must have been enough to deter the surgeon from resorting to it. The entire of the base of the tumour was tightly constricted with whipcord. We have then the improvement of Brodie and others, who transfixed the neck of the tumour and tied it in segments. Bushe,

of New York, has recommended some ingenious instruments for this purpose, but if you desire to practise it the modern plan will be found more efficient and very much less painful. The patient having been duly prepared and the legs secured in the manner directed for all these operations, the sphincter should be paralysed by stretching with the fingers. This will encourage the protrusion of the hæmorrhoids, and facilitate immensely the future steps of the operation.

The tumour which is to be subjected to operation should be caught by a tenaculum, vulsellum, or the hook designed for the purpose, and given in charge to an assistant, who draws it down steadily. With a short, straight scissors the pile should be separated from its connexions with the muscular and submucous tissue, upon which it rests, to such an extent that it shall be connected by an isthmus of mucous membrane containing the large vessel which supplies it with blood. Around this a strong ligature well waxed should be slipped to the very summit and there securely tied. The extremity of the pile and the ligatures may be cut off, but care must be taken to leave enough of both to prevent the knot from slipping. It may be necessary, by a second application of the scissors, to detach the pile from an adjacent tumour, so as still more to narrow the pedicle to be tied. To properly aid you a little dexterity is required of your assistant. Having the tumour well secured in the pronged hook, he should first draw it away from the wall of the bowel towards the anal opening, to admit of the due application of the scissors to the groove which separates the pile from the margin of the skin. When the ligature is lodged deeply in the incision the hook should be rapidly passed to the other hand, and the pile now drawn in the opposite direction, so as to facilitate the knotting of the ligature over the pedicle of mucous membrane. As to the best material to use for this purpose there is some difficulty. I have seen a patent platted silk cord used for this purpose, and which had great strength when simply stretched, break off at the second knot—a very awkward occurrence. Whipcord answers well, but I have found nothing to equal three strands of common shoemakers' hemp gently twisted and then well rubbed with shoemakers' wax. This will bear any strain; the first knot will remain fixed until the second is tied; it will not crack across at the knot, and it is not permeable by the fluids of the intestine.

Several tumours may be thus dealt with in detail. A piece of ice may be passed into the bowel, and a light dressing of absorbent cotton or fine tenax secured by a T bandage. In the evening the dressing should be changed, and a morphia suppository introduced.

The bladder should be carefully watched, as retention of urine is likely to follow this or any operation on the rectum. If possible the bowels should be kept from acting for two or three days. The knots separate and are discharged in about eight days. It is desirable that the

patient should be confined to a sofa for about a fortnight after the operation, but they sometimes feel well enough to go about and transact business.

Dr. Bodenham of New York objects to the drawing down of the pile and to the incision. He regards the lining membrane of the bowel as highly sensitive, much more so than the piles themselves. He therefore advocates tying the tumour with a soft silk ligature with sufficient tightness to diminish the circulation—not to strangulate it. I cannot think this recommendation of any practical value.

This operation has been impugned on the ground of being painful, tedious, and especially exposed to the danger of tetanus. With the full use of anæsthetics, which it is your bounden duty to offer to your patient in every such proceeding, the objection on the ground of pain must disappear.

The operation is no doubt tedious in its results, and the convalescence involves some loss of time, which, in this age of rapid progress, might be a consideration which would weigh with some persons of excitable temperament.

The objection that the operation is liable to be followed by tetanus is an interesting piece of surgical history. Mr. Curling records that in the spring of 1858 no less than four of the cases operated on by deligation at St. Mark's Hospital, London, were rapidly followed by this fatal disease, causing a great shock and bringing the operation into disrepute. It is, however, a well-known matter of history that during that same season there was an epidemic of tetanus, many cases having occurred in other hospitals and following operations of various kinds. Now I have seen enough of this dreaded malady to convince me that it is greatly influenced by atmospheric and other climatic conditions. I remember in 1878–79 we had several cases of tetanus in our accident ward, and I believe its frequency at that time was also observed in the other hospitals of this city. Since then we have had no case of the disease. Thus we see that the application of ligature to piles is not in the least more likely to be followed by tetanus than any other surgical operation. I have heard it stated that abscess in the surrounding areolar tissue is a source of danger after the operation, but no operation here is free from that risk. I believe the ligature has never been a favourite operation in the Dublin hospitals for the treatment of internal piles.

In the management of a large number of cases of internal piles I have found the ecraseur most useful, being quick, manageable, and convenient. Without anæsthetics it is undoubtedly painful, but they may be used with advantage and safety. In *The Dublin Quarterly Journal of Medical Science* for May, 1864, I ventured to draw the attention of the profession to the advantages of this mode of treatment, and nothing that I have since seen has changed my opinion as to its great value in the majority of cases which we meet with in the early stage of the disease.

The sweeping denunciations which have been uttered against this mode of treating piles by some authors of high practical character have created a strong prejudice against its employment, and tended much to restrict its fair trial; though for some time biassed by these opinions, more matured experience and extended observation have convinced me that were the merits of the *ecraseur* to stand on this one application to the purposes of practical surgery, it would be fairly entitled to a place in our *armamentaria chirurgica*. Mr. Ashton thus stigmatises the instrument:—"Another plan for the removal of hæmorrhoids and other growths emanated in Paris, and became a fashion for a time, but happily, in England, at least, is now little practised. I allude to their ablation by that crushing, lacerating, and unscientific machine, the *ecraseur*, which in appearance and operation suggests the idea of belonging rather to the torture chamber of bygone days than of being an instrument of modern surgery. M. Nélaton reports that many who have been operated on by it are now the victims of traumatic stricture of the rectum."

Mr. Curling objects to its use, as being sometimes followed by hæmorrhage; being tedious, and being likely to be the cause of contraction of the anal aperture.

To claim for the *ecraseur* that its operation is always free from untoward results, would be to assert what is equally untrue of the ligature—of every surgical appliance to which we resort, as well as of everything human—but I am fully satisfied that under impartial trial in cases to which it is not inapplicable, it will realise a fair amount of success.

Let us for a moment examine the objections which have been urged against its use.

Hæmorrhage, primary or secondary, is only likely to occur where the movement of the instrument has been made with too great rapidity; and although blood to a small amount does issue from the surface of the pile during its removal, or from those adjacent to it, from contact with the chain of the instrument, even this may, with care be avoided, and I have never seen it cause any trouble. Secondary hæmorrhage has not presented itself in any of the cases in which I have employed this instrument. The instances in which it has been recorded may be explained by some unusual coincidence; possibly some peculiarity of the patient's constitution, or too hasty an application of the instrument—as it is an established fact that, in the removal of other growths equally vascular, immunity from hæmorrhage, primary and secondary, has been very generally accorded to the *ecraseur* by the weight of surgical authority; while, on the other hand, cases have occurred in which very severe and alarming hæmorrhage has been known to follow the use of the ligature, both at the time of its application and subsequently at its separation; so much so that Mr. Salmon advises that for several hours after the operation by ligature the patient should not be left without some one at his

bed-side capable of acting in the event of this contingency. Thus, hæmorrhage may be the result of one operation as of the other—in both, however, being the exception, not the rule. The second objection to the instrument, that its application is tedious and clumsy, is, I think, equally unfounded, as, assuredly the five or ten minutes required for the removal of piles by the ecraseur can be most favourably contrasted with the time required for the perfect securing of the ligatures, and for their detachment; whereas on the second or third day after the operation by the ecraseur all soreness has passed away, and the patient suffers no further inconvenience, and his mind is set at rest when he is satisfied that the operation is completed.

Let us now pass to the third and most serious charge laid at the door of this operation—its tendency to cause contraction of the anal orifice. The authority of M. Nélaton has been put prominently forward in support of this objection. He states:—"During about a twelvemonth I have seen a great number of patients, who have come to me in order to undergo an operation to remedy this unfortunate consequence of the removal of hæmorrhoidal tumours, the stricture sometimes scarcely admitting the passage of a quill." But M. Nélaton, further on, states what has not been quoted by some of those who cite his authority:—"It has arisen because not only the mucous projection, which alone constitutes the disease, has been removed, but, also, a more or less considerable portion of the skin at the orifice of the anus." Thus it appears either that the ecraseur was employed in the removal of external piles, for which it is comparatively unsuited, or else was manipulated without the ordinary caution which even the simplest and most trifling operation requires at the hands of the conscientious surgeon.

The same imprudent destruction of the integument, at the verge of the anus, whether brought about by the ligature, by caustics, by the knife, or by the ecraseur, will alike produce the same untoward and discreditable consequences.

These views have not been put forward rashly, or without having been submitted to the test of absolute practical observation for a considerable time.

I have employed this treatment in many cases of internal piles, before classes of students and practitioners in the surgical wards of this hospital—a field of observation peculiarly favourable, the greater number of cases occurring among the Constabulary patients, who are under constant surgical supervision during their entire service in the force, and would have been returned to the hospital had they experienced any of the serious results attributed to the operation, which they themselves would not be likely to conceal. In few instances has the disease reappeared, and in none has the patient applied for the relief of symptoms which could be attributed to the use of the ecraseur. In private practice

it is often difficult to determine the result of such operations; as, should they be attended with want of success, or any bad after-consequences, the patient is not likely again to consult the same practitioner; which is also much the case even with ordinary applicants for hospital relief.

The preliminary arrangements so frequently insisted upon having been carried out, the pile should be seized with forceps or multiple hook and well drawn through a loop of the chain of the ecraseur, which should now be tightened steadily, but very slowly, until the pedicle is cut through. It occasionally happens that the mucous membrane remains entangled in the slot of the instrument. It should not be pulled off or cut, but detached by torsion, which completely guards against the danger of bleeding. The ice and cotton dressing may now be applied, to be followed after some hours by the morphia and belladonna suppository.

The repugnance which some individuals have to every kind of cutting operation and the risk of hæmorrhage led surgeons to resort to caustics of various kinds for the relief of piles. We will first speak of the potential cautery. Of these nitric acid takes the most prominent position, and has been strongly advocated by the Dublin surgeons. We find in our old hospital case-books some records on this subject of great interest. We have a number of cases in which Mr. Cusack applied the nitric acid to these growths with success; but where the tumour was of large size the acid was applied to it only partially, the result being that, when the slough separated from the vascular tissue of the pile, hæmorrhage invariably supervened, and in some instances to an alarming degree. When this occurred Mr. Cusack was in the habit of using actual cautery, for the application of which he devised irons of various shapes. The results are reported as highly satisfactory. These cases show us that thick fleshy piles cannot safely be treated with potential caustics. They do not exert their influence to a sufficient depth to offer security against hæmorrhage when the eschars are being detached.

For the vascular tumour of the rectum, the nævoid pile, Mr. Houston has insisted on the value of nitric acid, and this practice has received the sanction of almost all surgeons for this special variety. The mass being made to protrude at the anus, the surface immediately surrounding the pile should be coated with olive oil. The surface of the tumour should be touched with a stick dipped in nitric acid until it assumes an ashy gray colour. Oil should then be applied and the parts returned. I have used the following modification of potential cautery for a single tumour:—Take a common surgical needle, and, having some nitrate of silver melted in a porcelain capsule over a spirit lamp, coat the needle with caustic to within a line or two of the point, which should be left clear for the purpose of piercing the pile, which should be transfixed. The caustic thus melts in the interior of the mass and causes its consolidation.

On the same principle I have seen them injected by means of a

hypodermic syringe with a solution of perchloride of iron or of ergotine. The injection of iron-salt into vascular or nævoid tissue has been followed by fatal embolism. Carbolic acid has also been suggested for this purpose. The treatment by the actual cautery, as practised by Cusack, Lee, and Henry Smith, is, beyond doubt, a safe, sure, and most thoroughly effective means of dealing with the disease. We have seen that Mr. Cusack first resorted to it as a means of controlling the bleeding after the use of nitric acid, but subsequently adopted it as a primary operation—piercing the pile with pointed cauteries resembling these now used for nævi, at other times using a clamp guarded with wet chamois leather. I think we are indebted to Mr. Henry Smith for having established this mode of treatment on a sound surgical basis. This operation with the clamp and cautery you have often seen in use in the hospital in severe cases of piles. The patient having been prepared and placed in the proper surgical position and the sphincter stretched, the tumour having been protruded, one of the piles is to be grasped in the usual way with tenaculum or forceps, and drawn well down; it is then caught between the blades of the clamp. The blades are protected with ivory, so that, should they become heated by contact with the hot iron, they will not burn the adjacent parts. You should further observe that the blades are fitted with a spring to open them, and a screw to keep them closed. For ordinary operations I have found it advantageous to have them narrower and thinner in the blades than those usually sold at the instrument makers. The pile having been adjusted within the blades, they are to be screwed home. The portion which projects beyond the forceps should be cut off with a knife or scissors. In doing this you must be careful not to cut off the entire of the tumour on a level with the clamp. If you do so the tumour may slip from it in the next stage of the operation. The cut surface should now be wiped dry, and the cautery at black heat almost, but not red, should be lightly passed over the cut surface. You must never forget that for staunching bleeding you should use only black heat; for destroying tissues, you must apply it red or white. You have in the thermo-cautery of M. Pakelin, which is now used in this and every hospital, a beautiful application of science to surgery. By it you can regulate the amount of heat with the most extreme delicacy. You have often seen used here for this purpose a scissors heated by this instrument, by which the cutting and searing are simultaneously performed. The blades of the clamp should now be carefully relaxed a little by a turn of the screw to see if there is any bleeding. Should such exist the instrument must be at once screwed up again, and the bleeding point touched with the hot iron. In this way the several tumours may be dealt with in detail. The bowels may not be acted on for a day or two, and when they are about to move, the injection of an ounce of olive oil

from a gum elastic bottle will facilitate their action and diminish pain. A mode of operating by clamp only has been recently introduced into practice. This clamp has been constructed by Mr. Benham, to carry out the treatment of Mr. G. D. Pollock of St. George's Hospital, by whom it is approved and used. Without enumerating other advantages, it is pointed out that it so completely crushes the pile, as to leave only a slight fringed remnant, without any pain or bleeding, rendering the convalescence of the patient a matter of a few hours. The patient suffering from hæmorrhoids, being prepared for the operation in the usual manner, is placed under the influence of an anæsthetic. He is then turned on his left side; the right leg is well flexed and fixed with a strap, which is carried under the knee and round the neck. The pile to be removed is drawn well down by pronged hook or forceps. The clamp is applied to the base of the pile, and at once tightly and firmly closed by the action of the screw at the end of the handles. The portion of pile which protrudes inside the lips of the clamp is then removed by a pair of curved scissors or an ordinary scalpel. The clamp should afterwards be retained, still grasping the remnant of the pile, for about two minutes. If, after removing the clamp, there should be a slight oozing from any point of the fringed remnant, this may readily be arrested by the application of the torsion-forceps or a fine ligature (this process is, of course, to be repeated according to the number of masses to be got rid of). The dressing employed after the operation is completed is usually tarred cotton, or that prepared with salicylic acid, with warm bathing.

My experience of this instrument has not been sufficiently extended to enable me to express a competent opinion on its value, but from what I have seen of it, and judging of its *modus operandi*, I regard it as likely to come into use as an addition to our means of dealing with large hæmorrhoidal tumours; and Mr. Allingham, the distinguished surgeon of St. Mark's, London, who has given it a trial in a great number of cases, has expressed to me a very favourable opinion of its merits. It is rather a formidable-looking implement, very heavy and cumbersome; it resembles a carpenter's pincers, capable of being closed by a powerful screw, but perhaps more powerful and thorough in its action than lighter and more toyish instruments. Mr. Martin Coates, of the Salisbury Infirmary, in the address on Surgery at the late meeting of the British Medical Association at the Isle of Wight, has proposed a cutting operation intended to avoid the pain of strangulation, sloughing, burning or crushing, and aims at a simple incised wound to be closed by suture. The pile is seized in a dentated clamp of original construction; a number of catgut sutures are passed through the tumour beneath the clamp; the piles are now cut off superficial to the clamp, and the wound closed by tying the threads. Carbolic dressings are now applied.

This operation has not yet received the stamp of any extensive

experience. It appears over-weighted with a number of special instruments, and we could hardly expect that such a wound would easily accept primary union. The unceasing movement of the parts, the constant moisture, and the liability of the fine stitches to soften or cut their way through, are conditions inimical to immediate union of such a wound, however carefully brought together, and it is almost too much to expect that antiseptic surgery should triumph over such insurmountable obstacles.

Of the different modes of operating I consider the clamp and cautery the best for you to adopt for general use. It is manageable, almost free from risk, and I think the stimulus of the hot-iron with the subsequent contraction affords the greatest immunity from a return of the disease.

THE BACILLUS TUBERCULOSIS AND THE ELASTIC TISSUE OF THE LUNG
IN THE DIAGNOSIS OF TUBERCULOSIS.

It has long been known that one of the most positive aids in the diagnosis of phthisis is the elastic tissue of the lung as found in the sputum by aid of the microscope. In this manner fragments of considerable size derived from the disintegrated air vesicles are discovered with comparative ease—very much more easily and requiring much less manipulative skill than the bacillus tuberculosis as ordinarily sought for. Notwithstanding this fact, it is comparatively rare that sputum is studied, even by hospital physicians, with a view to finding it. It will be a matter of surprise, therefore, to some of our readers to learn that it is found in almost as large a proportion of instances as the bacillus, and is, therefore, practically as useful in the diagnosis of chronic phthisis. Drs. Dettweiler and Meissen (*Berliner klin. Wochensch.*, Feb. 12) investigated eighty-seven cases of chronic phthisis in different stages. In eighty-five of these clinically diagnosticated cases, or 97·7 per cent., bacilli in larger or smaller numbers were found in the sputum, while in eighty-two, or 93·8 per cent., elastic tissue of the lung was found. In this connexion it is interesting to know that Dr. Formad, of Philadelphia, has discovered that Fenwick's process of preparing sputum for examination for elastic tissue (boiling with liquor potassæ, setting aside to cool, and examining the sediment) serves also to prepare it for examination for bacilli, and in this manner both objects may be sought at the same time, and by a single manipulation.—*Med. News*, March 31.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F.M.S.

VITAL STATISTICS

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, March 24, 1883.

Towns	Population in 1883	Births Registered	DEATHS REGISTERED			DEATHS FROM SEVEN ZYMOTIC DISEASES							Deaths from Phthisis	DEATH-RATE per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		From all causes	From seven Zymotics
Dublin, -	349,685	794	979	151	261	-	1	-	-	46	35	18	136	36·4	3·8
Belfast, -	214,022	549	500	97	70	-	4	35	-	22	4	8	66	30·4	4·4
Cork, -	80,124	172	223	32	81	-	-	-	-	-	4	2	19	36·2	1·0
Limerick, -	38,562	77	90	13	27	-	-	1	-	2	-	1	10	30·4	1·3
Derry, -	29,162	69	69	14	19	-	-	-	-	-	3	1	6	30·8	1·8
Waterford,	22,457	50	45	5	19	-	-	-	-	-	2	-	6	26·1	1·2
Galway, -	15,471	34	54	12	15	-	-	-	-	2	2	-	8	45·4	3·4
Newry, -	14,808	33	40	6	12	-	3	3	-	1	-	-	3	35·1	6·1

Remarks.

The bills of mortality were again unfavourable in consequence of persistent cold during March. In the sixteen chief town districts in Ireland the rate of mortality was 32·7 per 1,000 of the population. As regards the eight towns included in the Table it ranged from 26·1 in Waterford to 45·4 in Galway. In Dublin it was 36·4; in Belfast 30·4. All these figures are considerably in excess of those which held in the English towns. In twenty-eight large English towns (including London, in which it was 23·0) the death-rate was 24·5 per 1,000 per annum. In Edinburgh it was only 19·8, but in Glasgow it rose to 32·5. Deducting the deaths (33 in number) of persons admitted into public institutions from localities outside the registration district, the death-rate of the Dublin metropolitan district falls to 35·2 per 1,000, while it remains as high as 40·2 within the municipal boundary.

The death-rate represented by the recorded fatal cases of febrile or zymotic diseases varied from *one* per 1,000 per annum in Cork to 6·1 in Newry. In Dublin it was 3·8 and in Belfast 4·4. These figures show a decrease on those noted in the preceding four weeks.

Within the Dublin registration district 794 births and 979 deaths were returned in the four weeks; of children under one year old 151

died, compared with 164 in the previous period. The deaths of those aged 60 and upwards rose from 256 to 261. Nothing can be more striking than the pernicious influence of cold upon the aged as exemplified in these figures.

Febrile zymotic diseases were credited with 118 deaths, compared with a ten-years' average of 121·6 and with 135 registered in the four weeks ending February 24. Of the 118 deaths, 46 were attributed to whooping-cough and 35 to "fever." Among the 46 victims of whooping-cough were 40 children under five years of age, and of these twelve were under one year. The deaths from this epidemic were seven less than those (53) registered in the previous four weeks. Of the 35 deaths from fever, 19 were referred to typhus, 15 to typhoid, and 1 to fever of ill-defined type. In Belfast serious outbreaks of scarlet fever and whooping-cough are still running their course. Measles and scarlet fever each caused 3 deaths in Newry.

The malign influence of the severe weather appears from the column giving the deaths due to pulmonary phthisis. They amounted to 254 in the eight towns, no less than 136 having occurred in Dublin. In this city also respiratory diseases were very prevalent and fatal, although not to the same extent as in the previous period. The deaths were 239, compared with a ten-years' average in the corresponding period of 224·8, and with 301 in the four weeks ending February 24. Bronchitis contributed 161 of the 239 deaths and pneumonia 42—the respective average number of deaths from these affections being 166·0 and 32·1.

On Saturday, March 24, the number of cases of the principal epidemic diseases under treatment in the leading Dublin hospitals were—small-pox, 0; measles, 4; scarlet fever, 24; typhus, 91; typhoid, 10; pneumonia, 21.

The mean temperature of the period was 39·0° in Dublin, 42·8° at Cork, 39·3° at Belfast, 36·7° at Greenwich, and 37·7° in Edinburgh. These values are very much below the average for the time of year, and would have been more so were it not that mild weather prevailed in the first of the four weeks included in the period under discussion.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.
for the Month of March, 1883.*

Mean Height of Barometer,	-	-	-	30·004 inches.
Maximal Height of Barometer (on 5th, at 9 a.m.),	-	-	-	30·791 „
Minimal Height of Barometer (on 30th, at 7 30 a.m.),	-	-	-	29·084 „
Mean Dry-bulb Temperature,	-	-	-	38·1°.
Mean Wet-bulb Temperature,	-	-	-	35·6°.
Mean Dew-point Temperature,	-	-	-	32·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·185 inch.

Mean Humidity, - - - -	79·2 per cent.
Highest Temperature in Shade (on 1st), - -	51·5°.
Lowest Temperature in Shade (on 24th), - -	25·4°.
Lowest Temperature on Grass (Radiation) (on 24th),	24·1°.
Mean Amount of Cloud, - - - -	54·1 per cent.
Rainfall (on 12 days), - - - -	1·056 inches.
Greatest Daily Rainfall (on 20th), - - -	·455 inch.
General Directions of Wind, - - -	N.W., N., & E.N.E.

Remarks.

An intensely cold and dry month, with constant polar winds and frequent showers of hail, sleet, and snow. The mean temperature was slightly below that (38·2°) of the memorably inclement March of 1867, and nearly 5° below the average mean temperature of the preceding eighteen years. It was also about 5° below the mean of January and February, 1883. The rainfall (1·056 inches) was less than one-half the average (2·151 inches), and the rainy days were only 12 compared with an average of 16·8.

The first two days of the month were mild; a large anticyclone lay over the United Kingdom, and a clouded sky prevented a fall of temperature by checking radiation. On the 3rd the cloud canopy broke up, and on the 4th temperature gave way decidedly, although the sun had great heating power by day, the thermometer rising to 50·9° in Dublin, 56° at Loughborough, and 57° at York. At this time the barometer was falling quickly in Scandinavia, and it soon became evident that extensive and serious depressions were approaching from the northward. At 8 a.m. of the 5th the barometer reached 30·83 inches at Parsonstown and 30·79 inches in Dublin, while the rapid decrease of pressure continued in the N. and N.E., and at night a deep cyclonic system passed down the eastern shores of the North Sea. A violent northerly gale swept along the E. coasts of Scotland and England, and even in Ireland moderate to fresh N. winds and gales were felt. For three days squalls of hail and snow, with "graupel," or soft hail, prevailed, and the biting wind rendered the cold even more intense. In Great Britain heavy snowstorms with much drifting were reported, and very intense frosts occurred. On the night of the 9th the thermometer fell to 17° at Cambridge, 15° at Loughborough, 8° at York, and 7° at Bawtry. Even on the shores of the "sunny Mediterranean" the cold at this time was phenomenal. At Toulon the thermometer read 24° at 8 a.m. of the 11th. Very severe wintry weather continued throughout Western Europe. On the 15th and 16th a depression advanced towards the British Isles from the Baltic, causing falls of cold rain and snow. This system travelled slowly westwards, passing over Ireland on the 18th. In Dublin the ground was covered with snow to the depth of 1½ inches on the morning of this day. As so anomalous a depression moved west-

wards, the N. and N.E. winds gave place temporarily to calms or light S. and S.E. airs. On the 20th a complex depression in the S. caused a heavy downpour of cold rain in Dublin, but much snow fell on the mountains south of the city. An area of high pressure now approached from the northward, producing very steep gradients for easterly winds in England and Ireland. A piercingly cold E. gale resulted, bringing snow and hail to England, but searching dry weather to Ireland. Severe frost occurred on the night of the 23rd, which was the coldest experienced during the entire winter in parts of southern and south-eastern England.

On the 28th the remarkable cold spell which set in on the 4th drew to a close, and on the 29th steep gradients for southerly winds were established in Ireland, where temperature rose decidedly, and a soft rain fell for many hours. At 8 a.m. of the 30th an irregular and deep depression was found over Scotland, where the barometer was generally below 29 inches. Strong southerly gales occurred in the N.E. of England and E. of Scotland, while the wind became N.W. or W. in Ireland, and fell light with a fresh decrease of temperature. The last day of the month was mild and fine.

In Dublin thunder was heard on the 15th, lightning was seen on the 27th. The air was foggy on the 4th, 10th, 14th, and 20th. A solar halo was seen on the 28th. Snow or sleet fell on the 7th, 8th, 10th, 14th, 15th, 16th, 17th, 18th, 22nd, and 26th; hail was noted on the 7th, 8th, 12th, 14th, 15th, 16th, 17th, 18th, 26th, 27th, 28th, and 30th.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

NEUTRALISATION OF TUBERCULAR VIRUS.

THE most conclusive evidence as yet adduced in favour of the contagiousness of tuberculosis has recently been brought to the attention of the Academy of Medicine of Paris by Dr. Vallin, in a paper bearing the above title, in which he gave the result of certain experiments having for their object the determination of the effect of disinfecting substances upon the tubercular virus. To this end, fragments of pulmonary tissue infiltrated with tubercle, and taken from a man dying of phthisis, were bruised in distilled water. This secondary tubercular matter resulting from the inoculation of the first, derived from man, Dr. Vallin used in his experiments. Filtering paper was saturated with the fluid thus obtained dried, and cut into pieces of equal size. Some intended for control experiments were moistened with pure water, and of the liquid obtained by expression, fifty centigrammes were injected, August 1st, into the peritoneal cavity of healthy guinea-pigs. One was found dead

on the 1st of October, in a state of great emaciation. A second was killed November 10th (the 101st day). In both, the liver and spleen were enlarged and very friable, the lungs were stuffed with confluent tubercular masses, in the midst of which the parènychma of the organ had almost disappeared. Other pieces of the virulent paper were submitted to the action of various disinfectants; the fumes of sulphurous acid, corrosive sublimate, nitrous acid fumes, &c., before being used for inoculations. In a chamber of fifty cubic centimetres capacity, the little pieces of paper were suspended at the distance of two metres from the floor; the sulphur burned was divided into four separate portions; the chamber was thoroughly closed, and the exposure to the vapour continued twenty-four hours. The animals inoculated with the paper thus disinfected with quantities of forty and thirty grammes of sulphur, remained uninfected; of two guinea-pigs inoculated with the virulent paper disinfected by twenty grammes of sulphur, in one the abdominal organs were tubercular while the other remained healthy. With the dose of sulphur at fifteen grammes, a guinea-pig inoculated was found tuberculous throughout; and whenever the quantity of sulphur burned was less than twenty grammes all the animals were found tuberculous. Other experiments were made with pieces of paper disinfected with boiling water, which apparently also destroyed the germs, the animals inoculated remaining unharmed. Corrosive sublimate in solutions of the strength of one part in one thousand possessed the same property; so also did nitrous acid. The important practical deduction from these experiments is that prisons, barracks, hospitals, and schools should be from time to time purified by sulphurous fumigations, which seem at once the most efficient and convenient of the measures employed.—*Medical News*, Feb. 24th.

J. K. I.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*The Progress of Medicine in a Quarter of a Century.*^a
By WILLIAM MOORE, M.D., Univ. Dubl.; President of the
King and Queen's College of Physicians in Ireland.

THE remarks I am about to make will be directed mainly to the progress which has been made in the diagnosis of diseases within the past twenty-five years. Medicine has been revolutionised almost within my own memory. This has been in great measure owing to the labours of Laennec, Broussais, and others in France, Graves and Stokes at home, whilst the experimental physiology of Claude Bernard, Brown-Séquard, Schiff, and others, have thrown a flood of light on the diagnosis of the most obscure affections which we are called upon to deal with.

I agree with the lamented editor of "Stokes on the Chest," that it cannot be doubted that the labours of modern pathologists in the localisation of disease, over-rated though they perhaps have been by the disciples of certain schools of medicine, have yet done much to removeth at great reproach of the art—its uncertainty. The discoveries of the different and numerous seats of morbid action led directly to the study of the symptoms of these lesions and of those physical phenomena which resulted from or accompanied them, and thus has the science of diagnosis been placed on such a sure basis that time with its mutations never can shake.

^a An abstract of the First Presidential Address to the Medical Section of the Academy of Medicine in Ireland.

The diagnosis of chest affections is now well-nigh perfect, and observations on the temperature have aided their differential diagnosis.

In connexion with the subject of affections of the chest, I may mention that recently I have received from Dr. W. Thomson, of Melbourne, his work on the "Germ Theory of Phthisis Verified." Dr. Thomson, in 1876, in his work on "The Histo-Chemistry and Pathogeny of Tubercle," advanced the views that specific micrococci would produce tubercle, first gray and then yellow, and that these minute microzymes were buried in the ruins they produced. These views have been adopted by Dr. Robert Koch, of Berlin, who states (in April, 1882) that he had discovered and isolated a parasite which appeared to be the cause of tuberculosis, and, further, that it was in the highest degree impressive to observe in the centre of the tubercle cell the minute organism which had created it. I think that to Dr. Thomson is due the priority of establishing the parasitic nature of this great pulmonic scourge. To Laennec we owe the origin of cardiac diagnosis, whilst to Traube is mainly due the knowledge of the relations which may exist between renal and cardiac diseases. His observations on the physiology, pathology, and treatment (especially the action of digitalis), have thrown a flood of light on this most interesting class of disease, which in our country has been supplemented by the writings of Stokes, Corrigan, Bellingham, Hayden, and others.

Dr. Stokes, in his book on "Diseases of the Heart," and repeatedly during the examinations for degrees in the University of Dublin (where for so many years I had the honour of being associated with him), has spoken of the difficulty of always determining which of the sounds is *first* and which is *second*, especially in weakened hearts acting rapidly and irregularly. Again, even where the pulsations of the heart are not much increased in rapidity, it sometimes, when a loud murmur exists, becomes difficult to say with which sound the murmur is associated. Over and over again I have had his opinion on such murmurs, and over and over again he has honestly told me he could not determine the point. In short, he goes on to say that in some cases we cannot resist altering our opinion from day to day as to which is the first and which the second sound, and, further, he held that the detailed descriptions of pre- and post-systolic and pre- and post-diastolic acted injuriously—first, by conveying the idea that the separate existence of these phenomena is certain, and that their diagnostic

value is established; and, secondly, by diverting attention from the great object, which is to ascertain if the murmur proceeds from an organic cause, and again to determine the vital and physical state of the cavities of the heart.

Still the diagnosis of valvular diseases has become very exact, more especially when we take into account the value of murmurs, coupled with a careful examination of the symptoms and physical signs, and indicative of the altered vital and physical state of the heart.

The longer I live I am disposed to be less and less absolute in my diagnosis of cardiac diseases from physical signs of murmurs alone; and that functional changes may cause what we pronounce organic lesions, not only to vary but entirely to disappear, I feel satisfied.

Abdominal aneurism and abdominal tumours are not so easy of diagnosis. In proof of this I will adduce a case which was admitted into Sir P. Dun's Hospital some time ago under my care:—

CASE I.—The patient was a pale, dusky man, aged about thirty-six, a pensioner. He had a look of one suffering from continued pain; he was restless, unable to sleep, greatly emaciated. There was occasional diarrhœa and vomiting. His chief complaint was of pain over the right lumbar region, this pain shooting down to the right testicle. There was difficulty in passing water. Swelling of the right leg, but no ascites or œdema elsewhere. Percussion of the liver was normal; lower down a dull, prominent mass, which filled the right lumbar, iliac, and umbilical regions, and extended backwards to the spine. The iliac glands on both sides were enlarged. On admission there was no albumen in the urine. This patient had severe syphilis on three occasions. He died ten weeks after admission. This case was represented to me as probably one of abdominal aneurism. The situation of the tumour, absence of pulsation, and physical signs of murmur, told against this diagnosis. Absence of jaundice, ascites, and prominence of the superficial abdominal veins told against hepatic disease. Renal disease was diagnosed by an experienced physician, so was lumbar abscess. The *post mortem* examination revealed a large colloid-like mass occupying the cæcum and part of the ascending colon; it projected into the posterior wall of the intestine. An iliac and lumbar abscess communicated with the opening in the intestine, and the contents made their way into the retro-peritoneal tissue.

This tumour was of the myxomatous type, and its specific character was not diagnosed. In the female such a tumour would have been still more obscure. At the time of the occurrence of

this case I could not find a record of a single case of cæcal tumour in the “Transactions of the Pathological Society;” perhaps some such contribution has been made since.

The subject of fevers is so vast I can only give a passing allusion. For the past eighteen months (since the Address by Dr. Cameron, M.P., at the Social Science Congress) the researches of Pasteur, Koch, and others, and the germ theory of diseases, have been well ventilated in this city. We have arrived at an advanced knowledge of the *specific* nature of fevers, and how far they are preventable. I allude more especially to the endemic fever in this country—viz., enteric. I have said a specific fever. Dr. Arnould, of Lille (see Dr. C. A. Cameron’s “Report on Public Health,” *Dublin Journal of Medical Science*, December, 1882), in a paper on the “Ætiology and Prophylaxis of Typhoid Fever” (*Annales d’Hygiène Publique*, Sept. and Oct., 1882), says specific disease is synonymous with germ disease. But so many kinds of parasites have been found in typhoid cases that doubts are entertained that the true bacillus typhosus has been isolated. Koch thinks that the bacilli, large and short, of Eberth are the only ones which seem to have a specific connexion with the disease; and as regards the seat of the parasite, Letzerich states that he recognised the typhogenic micrococci in blood in an isolated state, then in connective tissue, and in the parenchyma of the liver, in the kidneys, in the walls of the intestines, in the cells of the folliculi, in the prostate, in the lungs. Klebs finds his bacillus typhosus in the Lieberkühn glands, and in the connective tissue which surrounds them, in the pia mater, lungs, and kidneys, in Peyer’s patches, as long as the process is developing itself; Koch, in the kidneys, liver, and prostate. Eberth observed them in half the cases during the period of the increase of the disease.

Unfortunately it was always on rabbits that experiments were carried on in reference to the pathogenic effects of typhoid microzymes. Klebs gives an account of three sets of experiments, conducted by Dr. Chomjakoff, in which typhoid bacilli were injected into the peritoneum of rabbits. An immediate elevation of temperature ensued, which attained its acme on the third day. They all died on the third or fourth day, in two instances from diarrhœa. Lesions were redness and tumefaction of Peyer’s glands, enlargement of spleen, cellular infiltration of interstitial tissue of tumefied patches; presence of micrococci doubtful. Conclusion from experiments—that in a certain number of cases of

typhoid fever micro-organisms are found in the blood, in the tissues, and in cases of organisms which are absent in the normal state. But sporadic fevers arise from time to time, such as the "milk epidemic" which occurred in this city some years ago, and which leads me to speak of the influence of bacilli in the production of fever, as evidenced in the milk epidemic which comparatively recently occurred in Aberdeen, and which was communicated to the York Meeting of the British Medical Association by Dr. Cossar Ewart. This fever began with the usual symptoms. There was well-marked rigor; then a sensation of coldness for some hours, accompanied with great depression; pulse was rapid; temperature in some cases 105° F.; in the worst cases there was delirium. One of the most characteristic symptoms was an affection of the deep cervical glands near the angle of the jaw, fulness about the throat and tonsils, and pain along the lymphatics. In from twenty-four to forty-eight hours this fever subsided, but in most cases there was a relapse, and a second relapse, and in some cases even six relapses. In nearly all the cases recovery was slow, and three cases proved fatal. Three hundred persons suffered from this fever. All had been using milk from the same dairy. A sample of milk when the epidemic was at its height contained numerous micrococci, spores of fungi, and spores which resembled those of bacillus anthracis, the organism which is associated with splenic fever. When cultivated the spores germinated first into exceedingly delicate bacilli, and then into spore-bearing filaments. Confirmatory evidence of the relation of the bacillus to the disease and the disease to the bacillus was obtained by the examination of pus from an abscess over the jaw, which contained spores and bacilli similar to those found in the milk. Further investigations proved that the organisms had been added to the milk along with water. I am not aware that bacilli or micrococci were found in the samples of milk examined during the epidemic here, but I think Dr. Ewart's cases have thrown a flood of light on the exciting cause of fevers which we designate pyæmic for want of a better name. And now that we have seen the success of Lysterism in a surgical direction, I am looking forward to its application to the germ-produced fevers and so-called septicæmic diseases, in what form or by what most reliable antiseptic remedy time alone can reveal.

That a great advance has been made in the localisation of cerebral and spinal diseases most clinical physicians will admit, although still an enormous field is open for the observation of this

class of disease; and whilst we might be able to localise the origin of a right or left hemiplegia, and the symptomatic value which may attach respectively to convulsive affections, aphasia, and chorea, still cases will present themselves in which to draw the line between organic and functional nervous affections is one of the greatest puzzles which may confront the physician. Perhaps you will bear with me if I adduce a few cases which portray the anomalous symptoms of hysteria, and how they may assume symptoms pointing to intra-cranial organic disease:—

CASE II.—Not long since I was suddenly summoned to see a lady, aged about thirty-five, who alarmed her family by becoming “aphasic” within a few minutes with general paresis. She was carried to bed, when after a short sleep she awoke with speech restored, paralysis gone, and complained only of a sense of weariness. This most intelligent patient gave me the following account of her attack. She said:—“A feeling of numbness, and as if my arm was asleep, suddenly affected my right arm and hand, and this numbness extended to any part of my body which the affected arm touched, especially my right cheek; then my speech gradually became affected, and I kept on repeating a monosyllable, not expressive of my meaning, till after a few minutes complete aphasia ensued. I lost all power, could not stand or walk, and was carried to bed.” Her sight was unaffected; there was slight dysphagia, with this anæsthesia, which, as I have said, was communicable to adjacent parts. This lady, the mother of a large family and at present in perfect health, I have seen in three or four such “aphasic” attacks. She does not lose consciousness, and her anguish at the loss of speech and power is most distressing. One of these attacks occurred when she was some months pregnant, and on the other occasions she was neither pregnant nor nursing. The monobromide of camphor, in grain doses, three times a day, was the treatment employed in this case.

CASE III.—The next case I will adduce is that of Mrs. O’N., aged twenty. The third day after marriage her right extremity was seized with choreic movements, which knocked her right heel against the floor; gradually the right arm became choreic, and her head shook. This condition of things, when it first ensued, lasted continuously for twenty-four hours, leaving her quite exhausted. Attempting to hold the extremity made the movements worse. She never had any nervous symptoms before marriage, and menstruation had always been regular. The attacks are now reduced in frequency to three or four in the week, which she can moderate by assuming the erect position. She considers the sitting posture induces the attack.

I will only further allude to a case which was most carefully watched, and in which these varieties of sensation and motion were present with colour-blindness and ischæmia. It was fully reported in *The British Medical Journal* for April 1, 1882 :—

CASE IV.—The patient, Lizzie F., aged twenty-six, unmarried, was admitted on May 3rd, 1880, to Sir P. Dun's Hospital. She was of medium size, fairly nourished; complexion fair, but pale. She lost the sight of the right eye when a child from an accident. Her father died of heart disease; the cause of her mother's death she did not know. Her sister died in childbirth. She had been a domestic servant for some years, and stated that she was healthy up to three years previously, when she got a great shock in trying to save a child from drowning. On admission, she appeared irritable and whimsical. She suffered from tremor affecting the head, both arms, especially the right, and both legs, more especially the left. She could not stand without support; and, when the heels were approximated, she reeled, and would have fallen. This tremor in many respects simulated paralysis agitans, especially in the right arm and hand, the right forefinger and thumb approximating. This choreic tremor was most marked when she was at all excited, and when the extremities were extended. She could not write her name intelligibly, owing to tremor. The head and neck were kept bent forward. Sensation was lost over the right hand, both on the dorsal and palmar aspect and between the fingers, and over the right arm generally. The same condition applied to the left arm, except over the anterior part of the head of the radius. Both cheeks and temples were anæsthetic; the gums were sensitive. Pressure on the eyelids and stroking the temples induced a semi-mesmeric state. Over the anæsthetic parts, pricks of a pin did not bleed; and these parts were insensible to heat and cold. Her colour-vision was very defective; she called blue paper "black," white paper "dark," yellow paper "colourless;" in short, she could not define any colour, whilst she complained that objects danced before her eyes. Taste was partially lost—at times, totally lost. She could not taste quassia, turpentine, or camphor. Smell was gone, and hearing was imperfect. She had complete anæsthesia over both legs, except the soles of the feet; the chest and abdomen were anæsthetic, except a circle round the mammæ, which were painfully hyperæsthetic. Along the spine, hyperæsthesia prevailed, and pressure over the lowest cervical and upper dorsal vertebræ induced a scream. Sensation was lost over the abdomen generally; but, on pressure over both ovaries, great pain was felt. The pressure, if kept up, induced a hystero-epileptic fit. The temperature over the right ovary was 95.4° ; over the left, 96.2° . Menstruation was regular, and unattended with pain. There was appreciable contraction of the right arm and left leg, over both of which

extremities reflex action was slight; and the dynamometer placed in both hands showed complete amyosthenia. Faradisation showed more response in the left arm and right leg. In this patient—1. A complaint of headache was always made after the application of certain metals—zinc, copper, and steel—and after faradisation and magnetism. 2. The temperature of the limb rose, and sensibility was invariably restored, on the application of copper and steel; not so remarkably after zinc, and not at all after gold or silver. 3. No restoration of muscular power took place *pari passu* with the restoration of sensation. 4. Restoration of sensibility, no matter how brought about, was transient; but the superimposing a neutral metal helped to retain it. 5. No phenomena of transference could hold in this case, inasmuch as the anæsthesia was double. 6. Punctures made (previous to the application of copper and steel) invariably bled after the metals were applied for some minutes; ischæmia having prevailed before their application. 7. Recovery of sensation was simultaneous on both sides of the face after inhalation through the solenoid, and a marked rise of temperature took place, but no appreciable change in the condition of contracted muscles. 8. As regards the achromatopsia, it was removed by the application of metals and the solenoid; the colour “red” being invariably the first restored.

Time will not permit me to cite the various authorities on the symptomatic value of hemicrania and chorea, but I cannot pass on without referring to the opinion of one whose authority is admittedly of the highest order—viz., Charcot, who tells us there exists in the clinical history of the organic diseases of the nervous centres a symptomatic sign but little known and little remarked—viz., a kind of rhythmical convulsion, which occupies an entire half of the body, including the face (in many instances), and which assumes sometimes the appearance of the clonic jerking chorea, sometimes that of the tremor of paralysis agitans. This hemilateral trembling occasionally presents itself as a primary affection; in others it supervenes in a hemiplegia whose invasion was sudden. The lesion consists in the presence either of a focus of hæmorrhage or of ramollissement, or in that of a tumour of the posterior region of the optic thalamus and the adjacent parts of the cerebral hemisphere exterior to it. He thinks that complete hemianæsthesia, with derangement of the special senses, and consequently such as is presented in hysteria, may in certain cases be produced by a circumscribed lesion of the cerebral hemispheres, but he considers obnubilation of the special senses would remain as a distinctive characteristic of hysterical hemianæsthesia; and Dr. R. Vesseire’s

(Paris) researches show that certain cerebral lesions may produce, besides hemiplegia, hemianæsthesia such as has been observed in hysterical cases—*i.e.*, where there is abolition of sensation as regards touch, pain, temperature, and in some cases where there is diminution or obnubilation of the special senses, vision, hearing, smell, taste, on one side, hemianæsthesia may remain even for years after the disappearance of hemiplegia. Before leaving this subject I must refer you to Dr. Sigerson's valuable paper "On certain recently reported Phenomena in connexion with Hystero-epilepsy and Cerebral Anæsthesia."

The internal treatment generally employed in these cases was the administration of preparations of copper, where that metal, locally applied, induced sensation; in other cases zinc, and others steel, where these metals had the same local influence. Faradisation, the continuous current, and the solenoid *temporarily* restored sensation, sight for colours, taste, and smell; but the application of zinc, with copper overlaid, not only restored sensation, but kept it restored for half an hour.

I have brought these latter cases under notice with a view of inducing further clinical attention to such interesting and obscure symptoms as they present. I have seen what enormous strides have been made in the diagnosis of disease by a careful attention to pathology for many years, single-handed; but although physiology and histology have done much, and have still more to attain, it is better, as the great Bernard has advised, not to wait and let important phenomena escape, but to continue to register facts, the solution of which may afterwards be sought out by physiology.

ART. XV.—*Collective Investigation of Disease.*^a By J. MAGEE FINNY, M.D., Univ. Dubl.; F.K.Q.C.P.I.; King's Professor of the Practice of Medicine in the School of Physic in Ireland.

I HAVE been asked to give a short account of the movement which was originated during the last two years by some members of the British Medical Association, and which depends for its success on the sympathies and exertions of the ten or twelve thousand medical men who form that Association.

Disease is, we know, to be found following hard upon the steps of man. Wherever man is located over the face of this habitable earth, there will the seeds of disease produce their deadly fruit. To

^a An Address delivered before the University Biological Society.

check disease and to rescue man from its fatal grasp has been the highest aim of our profession, and to attain such an object science in its manifold manifestations has been summoned to our aid, and methods of treatment, scientific and empirical, have been tried with more or less effect and success.

The wonderful stimulus each fresh discovery gives to awaken a spirit eager for further discovery, the untrodden paths and vistas which in the diagnosis of disease have been opened out by the aid of the microscope, the incalculable benefits conferred upon medicine and surgery—nay, also upon the very trades and arts of the world, by the introduction of antiseptics and the intelligent perception of the deleterious influence of bacteria—these, and others like them, are things of to-day and occurrences which have had their birth within the last ten or twenty years, and are now recognised and established facts.

Let us, however, take care that in the resplendent sheen of these discoveries, and in the almost involuntary worship of the genius and research of their discoverers, we do not overlook many aids close to our hands, that we despise not things of small degree about which there is little *éclat*, but which, by cumulative energy and frequent recurrence, may prove an engine of great power, when wisely directed, in solving many problems and removing many hindrances in the practice of our profession.

How often as our eyes devour the pages of the works written by some great observer of disease, and as our minds grasp the truth of the conclusions set forth therein, and while we acknowledge the enormous power for good such men enjoyed and exercised, is it not true, is it not the experience of us all, that as we close the book we feel that though we have learned much and derived much for thought and reflection, there is a great gulf fixed between the present and the past, and that with the moving progress of our profession the labours and researches of individuals in the past, no matter in what direction and to what extent those researches were directed, fall short of what we want to know, and fail to answer satisfactorily many simple questions suggested by any fresh case of disease, and that no man can transmit to another the fruits of his experience—the outcome of the education and training derived from many years of honest work?

There must ever be pioneers to guide others on the path of knowledge, but the exertions of those gone before—the solid learning of a Stokes, the quick, intuitive perception, the readiness

of diagnosis, and the facile treatment of a Hudson—can never take the place of the individual exertions of every subsequent practitioner towards clearing the ground of the tangle weeds of uncertainty and doubt, and towards giving each his help—be it much or little, still his best—to erect a temple of which Truth shall be its perennial light and assurance its foundation.

One of the chief designs, if not the chief, of this collective inquiry (to use the words of Sir James Paget) is to bring into the field of knowledge all that may be gathered in general practice by family and general practitioners to obtain family histories. No one, as many of my hearers remember, so much as Sir James Paget, leans upon pathology and *post mortem* examination as the surest means of scientific advance; and yet—with a liberality peculiar to great minds—he can see good in other means, and so he adds:—"I would not hesitate to name the knowledge which may be gained by the collective research of disease, as that probably likely to lead to the very highest knowledge, and even to the solution of the most difficult problem in pathology as may be set before us." In furtherance of this statement he points to the difficulty in explaining inheritance of disease. Who among us can solve the question of inherited syphilis, gout, the rheumatic, the strumous diathesis, or explain the associations of these with each other or with, perhaps, various nervous diseases—epilepsy, hysteria, asthma, &c.?

In this 19th century, with all our boasted knowledge, with all the aids we possess to expose the histological mysteries of healthy and morbid tissues, let reflection on these and kindred subjects make us humble, and at the same time act as a stimulus to further effort to individual exertion to do something to help to unravel these difficulties.

Some such help is now sought of every practitioner, and the idea is to find out and record the early life-histories of individuals and of families, so that as years roll on some connexion may be found, if any such exist, between the early state of the patient, his early illnesses and complaints, and those later and greater diseases to which more definite and accurate descriptions can readily be given, and which form the closing scene of his life.

This question of family life-history is one of great difficulty, and it cannot be known, nor even guessed, what mines of wealth investigations such as these sought to be instituted by this movement may discover, to what conclusions they may ultimately lead, and how far

they may supplement, if not supplant, pathology as seen in the *post mortem* room.

The subject is not a new one, for every practitioner of any standing and large experience living among a fixed population utilises the knowledge he has acquired of the associated occurrence of diseases in families—which at first seem little connected—of the influence of hereditariness towards inducing or repelling diseases, of the weak points in the constitution of this or that family.

The scheme of collective investigation is, then, to glean the information at present locked up in the brain of the busy, active, and intelligent family practitioner, and to utilise it for the advancement of medical science, and the future benefit of mankind all over the world.

And here I may allude briefly to a further development of the scheme, whereby it is proposed to secure a true and reliable life-history of individuals, though it is much too soon to say if ever it will take root or be practicable. It will, however, I feel sure, commend itself as a valuable suggestion.

Every patient, it is proposed, should possess a register, the number of which shall be entered in the records of the Collective Investigation Committee. After each illness the medical attendant is to be asked to write, in the patient's register, a short account of his illness, which will serve as a guide to the same or any other medical man in subsequent attendance on the patient. As each book is interleaved with transfer paper, the tissue paper is to be removed by the medical man and forwarded to the central committee, where it is carefully filed and tabulated, and the life-history of disease is thereby noted from day to day or year to year. While no family secrets are divulged by this system, owing to the name being suppressed, the following objects will, it is hoped, be obtained:—

1. Greater precision in prognosis.
2. A better knowledge of the history of disease, especially with regard to its chronicity.
3. The relation of various diseases to each other.
4. The effect of locality and occupation on the development and complication of disease.
5. A wider experience of therapeutics.

If I might, from my own comparatively short experience, draw conclusions as to benefits to the patient of some such plan, I would say that they are great, for I know that the habit of recording every case in private practice since I entered on the profession has

proved of the greatest help to both me and my patient in subsequent attendances; and if the public could but be educated on this point I have no hesitation in saying they would be the gainers in many ways.

It will thus be seen that in this movement something different from hospital experience is asked for—something, in truth, which cannot be obtained in our hospitals.

In the latter the disease is rarely seen in its early stages, in the day of small beginnings. It is then probably well advanced, so that a diagnosis can be readily made and a prognosis laid down, which was quite impossible at its earlier stages; and yet these cases were known and treated by medical men in different parts of the country years before, and it is to them we must look for information on the peculiarities of disease in their district, on the associations of disease, and on many other points which naturally suggest themselves.

It is in hospital as though one saw some fully developed fruit, whose characteristics are sufficiently pronounced, but all the study we could give that fruit, all the microscopic and chemical tests we could subject it to, would fail totally to tell us where the plant grew which produced this fruit, the nature of the soil, the peculiarities of its structure and formation.

Many valuable records of hospital experiences in this and other countries are to hand, and have proved the basis of our medical knowledge. Such records cannot be too often studied by those who wish to master the innumerable difficulties of medicine.

In passing I venture to express the regret that in this city in our hospitals more labour is not given and energy directed to have full and complete records made of the cases, the effects of treatment, and the pathological appearances, as I believe a great waste of much scientific value occurs from a want of such a system.

I refer to this not with the object of fault-finding, but of impressing the minds of some of my hearers with the enormous advantage to themselves, to the profession, and to the science of medicine which the careful record of hospital cases might contribute. As an illustration of what value is placed on the number and variety of cases met with in a general hospital I would put the question—What is it makes one hospital physician or surgeon (metropolitan or provincial) superior to another? Is it his inherent good qualities, his abilities, his powers of perception, better education, skill and readiness in emergency? Not at all. It is simply that a morning does not pass without his having first studied a variety

of diseases, and of having noted the phases of the same disease in a number of individuals, and of having learned from this observation and this study what is the usual course of the disease, what complications are likely to arise, and the time when such may be expected, and what line of dietetic and medicinal treatment is most suitable to the complication and the original disease. The knowledge which elevates and enables a man to do much good is due, as Sir James Paget remarks, not so much to the mere fact of seeing diseases, or of having lived long to see them, but to the care, the prudence, the discretion with which the observations are made, remembered, and what is seen is recorded. The hospital physician only reaches superiority in proportion as he carries out this principle. It is for this knowledge, for this power—for in no science as in medicine is knowledge power—that men seek so keenly for hospital appointments; it is the power to apply this knowledge that makes the distinction between one hospital physician and another, and between the hospital physician and the general practitioner, who in other respects may be his superior.

There is no antagonism between the country family physician and the hospital physician; each can supplement the omissions of the other, and both can unite in helping forward the good work.

The noble edifice which Solomon was permitted to erect of old, in which the Deity condescended to dwell, was the result of collective and combined labour, conducted under, and fostered to a happy end by, the guidance of a master-mind.

We are told that the stones came to Jerusalem from distant quarries ready trimmed and squared; the timber, cedar trees and fir, from Tyrian shores, well seasoned and fitted, so that the sound of a hammer or chisel or any metal was not heard. Everything was ready to hand, and needed but arrangement for completion. And how was all this done? It was the result of years of steady and united purpose, the work of thousands of artificers, differing in language, nationality, and country, the outcome of collective labour; all from the highest to the lowest—from Solomon, in his unsurpassed wisdom and boundless wealth, to the meanest Zidonian or Tyrian wood-cutter—brought their best together, and, by the arrangement and skill of the master-mind, order arose out of confusion, and beauty and symmetry sprang to life out of meaningless heaps of mingled wood and stone.

Now in the collective investigation of disease, and in utilising hospital experience, it seems to me that the simile is not inappro-

priate, and the application is not strained. The object in view is divine; it is to overcome evil with good, to give peace and happiness in place of pain and misery—to succour those who cannot help themselves, and are placed in danger of bodily injury or death.

To attain this we ask that each will do his best, will send in his contribution of knowledge—small though it may seem to himself—but great as a unit of a comprehensive whole—so carefully prepared and concisely arranged that those who have undertaken the arduous labour of classifying and tabulating the materials supplied, and putting together the component parts, may erect a noble and magnificent building, from whose portals will issue forth in due time angels of salvation, to help the failing steps of suffering humanity to the shores of health and happiness.

To the success of so great and wide a movement as this investigation of disease there are two essentials, without which—nay, without each of which—it could not live, nor even survive the hey-day of its novelty. The first is, the help to be given by the many workmen throughout the country and large towns and cities; the second (and perhaps the most effective for good or ill) is, the judicious spirit and judicial mind which must permeate and influence the Central Committee; for without a good general to muster the forces, to calmly survey the situation, to avail himself of possible combinations, defeat and ignominy must ensue.

It may be objected that the hardworking practitioner cannot be expected so to arrange the information he has acquired of the beginnings of disease and the life-history of his patient, however valuable such information may be—that it is unfair to ask him to sit down and write out the notes of his cases for the purposes to which the Central Committee will put them, no matter how good and how generally useful such an end may be—that note-taking (which was considered so hard while a student that he shirked it altogether) would now be an almost impossibility—nay, the very thought of attempting it is so irksome that he must decline giving any such help. True, it would be a very great hardship to put upon these busy bread-winners all such work, and unfair to ask them to devote much time or labour to scientific research. Knowing and being fully aware of these real difficulties, the Central Committee have shown a most wise judgment by reducing the labour to a very minimum, and have instituted a system of recording cases in such a short and yet full way that the whole case is written in and ready for transmission in 15–30

minutes, and were the *inertia* removed from which it is admittedly hard to rouse the general practitioner, there is no doubt that the rank-and-file of the profession can now come forward and take their place as investigators of disease, and can give an impetus to science which can be obtained in no other way, and yet at very little cost to themselves. Suppose only one case of pneumonia or diphtheria was recorded by each member in the year, what an amount of information would be obtained! Unity is strength; and the work of collective research at the hands of ten to twelve thousand medical practitioners in the United Kingdom, as well as those members of our profession in the Colonies and the public services at home and abroad, cannot but prove a tower of strength and give an enormous stimulus to the advance of medical science.

Another effect of being engaged in such a work should not be lost sight of—nay, to the medical man it is the most important—and that is, the improvement which this system of investigation will give to his own mind. So that, almost without knowing it, his power of observation will be quickened; he will exercise more care and prudence in recording the cases which meet him in his everyday life; and before long the investigation of disease will more than repay the labour he has expended by the pleasure it will give him, and by removing the *ennui* of routine commonplaces by elevating each and every case into a problem to be solved, a mystery to be unveiled.

The history of the movement is of so recent a date that it is quite too premature to pass judgment upon it. To our descendants must that duty be left. I shall therefore simply lay the bare facts before you, and leave you to form your own independent opinion on them.

In 1880 Prof. Humphrey, in an address delivered before the annual meeting of the British Medical Association at Cambridge, laid stress upon the loss the profession sustained in the waste of valuable material which, for want of collection and a regular system of registering the views and opinions of the great mass of the profession, was taking place; and he urged upon the Association, as one of its greatest objects and highest works which it could undertake, the “gathering together of those scattered fragments, and then to condense, analyse, and make them the basis of the furtherance of science and the practice of medicine.”

The following year found men ready and willing to start such a movement, and a Central Committee was formed, at whose disposal

the funds of the Association were placed, for without the sinews of war so great an undertaking could not advance. To Dr. Mahomed, of London, however, is largely due the honour of giving it its first step; and to his individual exertions, his unwearied earnestness and devotion to this movement, is attributable the measure of success which it has achieved in so short a time.

In addition to the Central Committee, Local Committees have been formed, in connexion with the British Medical Association, in various places throughout the United Kingdom. The duty of these Local Committees is to enlist the sympathies of, and to solicit cooperation from, the members of the profession in their districts, to circulate the subjects upon which information is requested, and to supply those willing to help with the cards to be filled up and returned, and in every other way to further the objects of the Central Committee.

Fifty-four Local Committees have been already organised, and these committees include from 800 to 1,000 of the chief practitioners in England, Scotland, and Ireland; and already cards have been issued and returns made, from which good may be expected.

To the busy practitioner it is of the utmost importance that the cards issued, upon which the notes of the case are to be recorded and returned, should be comprehensive without being diffuse, clear and concise on points bearing on differential diagnosis and on treatment, and requiring as little labour in writing as possible.

This conception has been admirably carried out, as a glance at any of the cards issued will show. Take, for example, the subject of Pneumonia (No. 1 of the Series issued):—Not more than fifty words need be written, and yet the case is fully detailed as to the mode of onset, the lung affected, the character of the expectoration course of the fever, pulse, mode of termination, and result, &c.; and, in addition to all this, the important question of its relation to epidemic influence, its communicability, its association with other prevalent diseases and with defective sanitary conditions, are entered into and tabulated with the greatest ease, and without asking the recorder to waste any of his grey matter in thinking how he will arrange his ideas, whether he shall lay stress on this point or the other.

The method which attains its object with so little friction is one well deserving of good results and of imitation; and were our students supplied with suggestive queries in short concise paragraphs, case-taking would lose a vast deal of the irksomeness

attaching thereto, and the feeling of self-distrust which repels a nervous but otherwise willing man would be removed.

In these cards, which are intentionally very compressed, after each symptom is printed a number of possible replies; and all the recorder has to do is to erase with his pen those replies to which his case does not conform, and leave those which obtain in his case. For example:—To the query as to patient's habits with regard to the use of alcohol, the three words expressing various degrees of temperance are printed—temp., intemp., tot. abst.; two of which are then erased, and the description of the patient's habits in this respect is perfect, and takes only so long to describe as it does to draw a pen through the words.

On looking over the cards, with their suggestions, one cannot but see that the very effort on the part of a man, busied all day with various patients, to concentrate his thoughts on the whole case of any one of these patients after recovery has taken place, must have the beneficial effect of impressing it on his mind, of helping to clear up some difficulty in the management of some other and yet, perhaps, dissimilar case about which he has been perplexed, and of educating himself in the power of observing.

After a few observations made upon some of the subjects upon which collective information is sought, the medical man will find a new interest awakened, and ere long he will experience the charm (as Sir William Gull says) in the promotion of his own work and in the mere pleasure of observing and finding his own conclusions.

With each subject is issued a memorandum, which enters into a description of the disease of which it is the subject, being drawn up and prepared by men thoroughly conversant with the literature on the subject, and indicates the special *hiatus* they desire should be filled up.

The very reading of these memoranda, and some of them are very full and instructive, and the application of their teaching in recording any given case, should make us more watchful for our patient's good, more humble in our views of our superior knowledge, and should stimulate us to greater care and more scientific treatment.

It will thus be seen, and I trust fully recognised, that in this movement—which asks for the individual help of the busy, active, public man, the man who has watched and tended families from infancy to adult life, and who is familiar with the idiosyncrasies of the patients and of their diseases—the gift is not all on one side; for

while giving he is receiving, and ere he has brought his contribution towards building and ornamenting the temple of Knowledge, he has received his reward in more senses than one.

The other essential to which I referred is one of the greatest importance for the successful carrying on of the movement—nay, of its very existence, and that is, the constitution of the Central Committee, to whom all records should be sent, and by whose tabulation and discrimination the result of the contributions is to be collated and published.

It is in this direction in particular that a possibility of failure might be entertained. Sir William Gull has fairly stated the difficulties in an address delivered at the beginning of this year. He says:—"It is plain that if in this movement of collective research we see a Land of Promise before us, we must at the same time recognise that the way to it is by a narrow and dangerous path. For while truth must be accepted, when it is proved to be such, nothing will be more pernicious than false conclusion and partial truth sanctioned by so large a body as this (Coll. Invest. Com., B. M. Assoc.). The opinions of a single individual would have less weight and would take longer to permeate a profession than conclusions having the colour of authority, and when the error would be perpetuated by numbers interested in the fallacy."

Another difficulty—for I think it right to place the subject honestly before you in its true colours—is that of selecting right subjects, and proposing the questions on them in such a scientific and unbiassed way as to elicit valuable and trustworthy returns. So far, I am bound to say, the subjects are well chosen and the questions carefully put.

Upon the Central Committee is represented every shade of thought and opinion, as well as much special knowledge, so that no subject is definitely settled, without much critical sifting and many revisions.

The following constitute the subjects upon which collective research is invited, and they cannot fail to commend themselves to your minds as wise and judicious ones:—

No. 1. Acute Pneumonia.

No. 2. Chorea.

No. 3. Acute Rheumatism.

Nos. 4 and 4A. Diphtheria in its Clinical and Ætiological Aspects.

Nos. 5 and 5A. Syphilis acquired and Syphilis inherited.

Time will not permit me to go further into details nor to

make suggestions as to new objects for research—many such will occur to you—such as the nature and beginnings of cancer, the contagiousness of phthisis, the causes of fever, and a hundred others; but I trust I have said enough to show the work which is being done, the objects the movement has in view, and the bond of fellowship and brotherhood the exercise of its details must prove amongst the workers, far and near, who are actuated by the one desire—the advance of scientific truth—the good of mankind.

ART. XVI.—*Thirty Cases of Acute Goître treated successfully by the external application of the Biniodide of Mercury Ointment; with Remarks.* By SURGEON-MAJOR ALBERT A. GORE, M.D.; Fellow of the Royal College of Surgeons, and Member of the King and Queen's College of Physicians, in Ireland; in medical charge of the Female Hospital, Staff and Departments, Dublin.

THIS affection is uncommon amongst European soldiers serving in Bengal, only two or three cases of ordinary bronchocele appearing in the returns from year to year. Its occurrence has been attributed, as is well known, to a variety of causes, of which impure drinking water is the oldest—as old as Hippocrates. It seems certain, from the evidence produced by French observers, that it may be produced in this way in from eight to ten days, but evidence equally strong seems to prove that it may occur epidemically with an absolutely pure water supply. In the above cases it certainly occurred with a very pure water supply. The patients affected were all soldiers of the 30th Regiment, then quartered at Ranikhet, of which I was in charge—a large military station in the Kumaon Hills, 6,000 feet above sea level, and where ordinary goître is endemic among the inhabitants. Two Indian physicians of repute have attributed its origin in these hills to very different causes. One, Dr. M'Clelland, thinks that it is largely in excess in the limestone districts, whilst Dr. Macnamara says that, when occurring in the hills, it is due to malaria. The latest theory advanced by Dr. Woakes, that the point of departure in the morbid process is a paresis of the vasomotor nerves which mediate the vessel area constituted by the thyroid gland, was not then before the profession. Dr. Mouat, of Bengal (*Indian Annals of Med. Science*, 1857), was the first to notice specially the value of the use of biniodide of mercury in combination with the rays of the sun, in the cure of goître. His practice was to use the

mercury as an ointment of the strength of three drachms to a pound of lard; a portion was rubbed in an hour after sunrise, the patient afterwards sitting with his goître well exposed to the sun as long as he could endure it. After this a fresh layer of ointment was carefully applied, and in ordinary cases a single application was sufficient. Of the value of this treatment in India there can be no question, as will be seen from the statistics appended to this paper.

The back numbers of the *Indian Medical Gazette* contain many interesting notices, which serve to illustrate the ætiology and treatment of goître. One of these is contributed by Surgeon-Major L. Cameron, Civil Surgeon, Backergunje, to the number for July, 1880, in which he gives the history of goître in the 41st N. Infantry, between the 31st December, 1868, when the regiment arrived at Buxa, Bhootan, and the 5th April, 1872. The regiment had been stationed at Agra immediately before going to Buxa, an old Bhootan fort in the Western Dooars, and situated on the lower spurs of the Himalayas, at an elevation of 1,800 feet above sea level, built upon a confined and natural plateau in a narrow valley. Geological formation—gneiss of varying composition, and probably containing lime, as streams issuing from it encrusted twigs with the carbonate. Transformations of the gneiss into clay, slate, and mica schist were found. The vegetation was exceedingly abundant. There were two seasons—the cold, dry and bracing; and the wet, commencing about the middle of April, when the air was soft and damp, and almost saturated with moisture. Water was obtained from two springs travelling gravelly beds, clear, sparkling, and a little hard, and depositing carbonate of lime on boiling.

In the interval under observation, 21·7 per cent. of the men (strength, 678) were affected. Excluding sixteen second attacks, 147 cases were treated as below :—

Age	No. of Men	Cases	Average Period in Months in Buxa	Percentage to Strength
Under 20	26	6	16	25
20 to 24	253	80	24·2	33
24 to 29	196	41	23·7	21
29 to 34	103	19	32	18
34 to 39	61	1	35	16
39 and upwards	39	—	—	—

It was observed that those under 20 contracted the disease with the least amount of exposure. The period of growth after adolescence, during consolidation, and early period of maximal vigour of the body, were the periods most liable to the disease. The shortest period of exposure was 8 months, and longest 39. No European adult was attacked, but some cases occurred among European and native children, Mahomedans, and "other" Hindoos, to an extent of 31·8 per cent. Hill Hindoos from Kangra and the neighbourhood suffered least, 11·2 per cent. The Bhootans residing in the village north of the fort (284) suffered in the following proportions:—

Men	-	-	5 per cent.
Women	-	-	7·7 „
Children	-	-	2·9 „

The Bhootans suffered less than the regiment—less even than the Hill Hindoos. There were 16 second attacks; average age, 24 years; time after end of first attack, 10·1 months.

The 38th N. I. succeeded the 41st N. I. at Buxa, arriving in March, 1873, and remaining there until November, 1875. According to Dr. Courtney, the average strength was 598. They were chiefly Hindoos, and the admissions for goître were $7\frac{1}{2}$ per cent. annually. He noticed that the total number of cases in the Bengal native army for 1873, 1874, and 1875, was 260 out of an average strength of 53,305, so that one-half of the cases occurred in a regiment stationed in a well-known goïtrous locality. The disease in most cases commenced as a soft swelling of generally the right lobe of the gland, gradually spreading and becoming somewhat indurated. Frequency of pulse and palpitation were not observed. In the early months of the stay of the regiment at Buxa the disease often occurred in an acute form, several men presenting themselves at hospital on the same morning, and stating that the goître had come on during the previous fortnight. The native soldiers termed the disease gheza, and attributed its origin to the hardness of the drinking water, the characters of which have been noticed already. Dr. Courtney further states that the valley in which the cantonment is situated is bounded on three sides by hills, but open to the south or dense "Terai" jungle below, but that the north or night wind kept the malarial vapours from extending from the "Terai." He considered the soil to consist largely of dolomite or magnesian limestone, while in several places metallic ores, resembling antimony in appearance, were found near

the surface. Goître was endemic, and amongst the women in particular. The treatment generally lasted from three to six weeks, two applications of the red iodide of mercury ointment (16 grains to the ounce) being in most cases found sufficient, together with the administration of Lugol's iodine tincture. The men were directed to boil the drinking water. He attributed the attacks to some impurity in the latter.

Mr. W. P. Heher describes, in the *Indian Medical Gazette*, March, 1881, a case of acute goître occurring in the person of a native at Missourie, forty-five years of age, well developed, in good health, and where the symptoms developed themselves within sixteen days by a uniform distension of both lobes. In this case it could not be attributable to the water supply, which was the same used for several years, but to the fact that the man had worked harder than usual in carrying loads up and down hill for several days, thereby increasing the activity of the general circulation, which was thus supposed to have acted specially on the gland. He considered the rarity of acute goître proved by the fact that of 450 cases of ordinary goître treated in the dispensary in three years, no mention is made of the disease, although the ordinary form is very common in the Missourie hills, about 16·5 per cent. of the natives having enlarged thyroids, the affection invariably taking months or years to develop to any appreciable size. He found it very rare in "season" visitors or their servants, although a few thousand remained from six to eight months, or in the Europeans residing there. He thought it to be more common in females. From analysis of the water made at Roorkee from that sanitarium, all proved it to be hard from magnesiate rather than lime salts, and that much of this hardness was removable by boiling. To the latter circumstance he attributed its rarity among the permanent residents of the place.

In *The Indian Medical Gazette* for January, 1879, are given three cases, by Mr. T. E. Hall, the first occurring in the person of a young married lady, at Madras, in which the gland steadily enlarged from shortly after marriage, apparently coincident with impaired health and irregular and scanty menstruation and anæmia, but which was readily cured by the local application of the biniodide of mercury ointment, applied freely with an ivory spatula, and afterwards exposed for ten minutes to the heat of a small pan of live coals, with the result of a well-blistered surface. This is a very good plan during the rain or when the sun is obscured. The

second case occurred in a Bengalee—anæmic; was of two years' growth, without any well-marked cause. The swelling disappeared entirely after the third application of the ointment, and had not reappeared in two years. The third case was of long standing, and of the cystic variety, and was not so favourably affected.

In the province of Kumaon, Dr. M'Clelland has produced a series of statistics to show that endemic goître is largely in excess in limestone districts, viz. :—

Water derived from				Percentage of Population affected.
Granite and gneiss	-	-	-	0·2
Mica slate and hornblende	-	-	-	0·0
Clay slates	-	-	-	0·54
Green sandstone	-	-	-	0·0
Limestone rocks	-	-	-	33·0

The accuracy of these figures has been disputed by Macnamara, who pointed out that waters containing large quantities of lime, as in the Punjâb, have been drunk with impunity.

Endemic goître is very common in Nepaul, and among the coolies imported from there for the purpose of working on the tea plantations in the neighbourhood of Ranikhet and Almorah, and generally treated by the planters by the local application of iodine. These natives have an idea that it is due to the snow-water.

Gneissic and schistose rocks occupy the largest portion of the lowest Himalayan ranges. In Kumaon, of which Ranikhet is a principal station, the lines of fracture are filled with basic eruptive rock, and mica schists occur, the latter commencing at Ranikhet. The detritus of these enter largely into the soil, and, after heavy rain, the surface-springs become impure and turbid for a time. The water of the station is soft, gives a good lather with soap, shows only faint traces of chlorides and organic matter, and little lime, as will be seen by the following analysis, and is said to be one of the purest waters used by the troops in Bengal :—

	Ordinary Spring.	Spring used by the Troops.
Total hardness - -	3·	2·27
Permanent hardness - -	3·	2·27
Total solids, grains per gallon	7·72	5·96
Lime, calculated as carbonate	2·88	2·
Salts of the dry residue, soluble in water - -	3·76	2·96

The 30th Regiment landed in India 9th February, 1880. During 1881 we had at Ranikhet thirteen cases of acute goître, not confined to any particular barracks. These last are situated upon a series of isolated hills, the ascent to some of which is very steep and somewhat laborious. The climate is cold and bracing in winter, very hot in May and June, but damp and humid in the rains.

The disease at Ranikhet amongst the men of the 30th assumed the dimensions of a small epidemic, affecting 1·3 per cent. of strength. The first cases came in quick succession after the first heavy fall of rain, which occurred on the 5th June, ·50 of an inch, and 6th, 1·57 of an inch. The weather had been very hot just before, in the shade 80° to 85°, and the reduction of temperature was marked and sudden. The second small outbreak in August was also preceded by heavy rain. In the first cases the swelling had only been observed for about ten days; the enlargement was confined chiefly to the lateral lobes of the thyroid body, soft and uniform. The last two patients admitted had only observed the swelling for four or five days; both came into hospital in December, when the weather had become very cold, and it is worthy of remark that there had been no rain for a considerable time—atmospheric conditions altogether different from those occurring in June, when the weather was damp and wet. One of these men came from G Company, located on a high plateau, the other from a barrack on one of the lowest levels and close to the hospital.

The average time in the hills of the 13 patients affected was 365 days—minimum, 186; maximum, 563. All the affected were as a rule young soldiers; average age 22 years—minimum, 16; maximum, 28. With one or two exceptions there was no previous history of malaria. None of the women and children of the regiment, numbering 43 and 77 respectively, were affected. 123 women and 245 children, with a number of men of various regiments, arrived on the 17th April at Ranikhet. None of this party were affected.

I knew of only two cases occurring among European women—one the wife of the schoolmaster, born in Derbyshire. She had a uniform and well-marked goître of late growth. Immediately after her confinement it disappeared without treatment. The other, wife of a supervisor of works, very anæmic and in feeble health, owing to having several children in quick succession. In her the disease was cured by the local application of the red

iodide of mercury ointment. Both these women were over a year at Ranikhet; but the affection in both these cases appeared to have been connected with an active state of the uterine organs rather than residence.

None of the officers, their families, the casual visitors (some of whom were here for six months), or any of their servants, were affected with brônchocele.

The treatment adopted was altogether local, and that adverted to by Dr. Mouat in the *Indian Annals of Medical Science*, 1857—viz., biniodide of mercury as an ointment, in combination with the rays of the sun. It was entirely successful. In two cases it was alternated with the local application of tincture of iodine. The ointment was rubbed in for ten minutes or more as the patient sat with the enlarged gland exposed to the sun or a strong fire. Only one case was any length of time in hospital—viz., 79 days, an anæmic man, aged 22. The average duration of the treatment in the remaining twelve cases was 22·6 days—minimum, 13; maximum, 33 days—facts which seem to show, as is the general experience in India, that in this way acute or ordinary goître is an easily curable disease.

The cause of applying to hospital was not so much the swelling of the neck as the inability to hook the collars of the serge jackets.

The coincidence of the first outbreak with the occurrence of a sudden rainfall would point to a water impurity, but the one fact which stands out prominently in the table annexed is the length of residence, averaging a year at the station. The women and children of the regiment who were equally long at Ranikhet drank the same water, and lived very much as the men, yet they did not suffer on this occasion. They lived on a more level plateau, and were not so much in the habit of ascending heights as the men, and, as a rule, they stay very much about their quarters. In some former epidemics in India this class of persons have been alone affected, while the men living side by side have escaped.

The beer supplied to the troops is obtained from a neighbouring brewery. I have been informed that some hill brewers add sulphate of lime to the beer, in order to approximate it as much as possible to Burton ale, which is known to be made from water containing a large proportion of that substance. The addition is said to make the beer more frothy and agreeable to the taste. But then natives never drink beer—at least the classes most largely affected with goître.

It seems to me that locality, length of residence, some impurity in the water not easily determined, and individual predisposition or peculiarity are the combination of causes which would best explain the origin of the disease. The one common factor was a certain length of residence in the hills, a goïtrous locality.

During 1882 acute goïtre continued to show itself at intervals in the regiment—average strength, 931. There were 16 admissions; shortest period in the hills, 252 days; longest, 913; stay in hospital, 13 to 46 days; average, 22·5 days. As in the previous year, none of the men, women, or children of the season's details, numbering 59 men, 116 women, 257 children, were affected, or any of the officers, women, or children of the regiment.

Three of the cases are of sufficient interest to merit a brief note. One, a soldier of the last draft, aged 25, service 2 years, 252 days in the hills, admitted 7th September. He was the only one of the year's recruits who came under treatment. Had no previous admission to hospital.

The last patient, aged 22, 652 days in the hills, very tall, 5 feet 11½ inches, was the only case of the exophthalmic variety admitted. There was no protrusion of the eyeballs, but the soft goïtrous swelling pulsated visibly. He was cured in 17 days. The third, a cell prisoner, aged 25, service 3 years, in the station since 26th April, 1880, in the hills 848 days, for 213 days under confinement, on prison diet, and very excellent hygienic conditions, in a roomy, well-ventilated cell, not ascending heights, or exposed to vicissitudes of climate, performing only a moderate amount of exercise, drinking nothing but filtered water or milk (same as supplied to women and children who were unaffected), was admitted on 23rd August with a soft, goïtrous, uniform swelling of five days' duration. The four other cell prisoners were not affected; two of them had been under confinement for four months. On examining the water it was found to be tasteless, odourless, with only a few minute floating shreds; had no reaction with permanganate of potassium, and yielded only faint traces of chlorides—was, in fact, pure, and of excellent quality.

I have observed that the duration of treatment varied according to the systematic manner in which it was carried out. When the ointment was properly rubbed in, and the goïtre sufficiently well exposed to the sun, it was the more quickly cured.

TABLE showing Admissions for Goître amongst N. C. Officers and Men,
30th Regiment, Ranikhet, Bengal, May 27th, 1881, to 6th Nov., 1882.

No. of Case	Age last Birthday	Date of Admission	Date of Discharge	Duration of Disease in Days	Days in the Hills up to Date of Admission	Any previous Admissions for Malarious Fever
1	22	1881 May 27	1881 June 24	29	392	No
2	24	June 10	July 3	24	411	No
3	25	„ 26	„ 28	33	427	No
4	27	„ 27	„ 23	27	186	1 for ague
5	24	„ 28	„ 14	17	429	No
6	22	„ 29	„ 11	13	425	No
7	28	July 17	Aug. 2	17	448	23 days remit- tent fever
8	16	Aug. 7	„ 27	21	469	No
9	18	„ 11	Sept. 8	29	473	No
10	22	„ 16	Nov. 2	79	478	No
11	26	„ 17	Sept. 2	17	479	No
12	21	Nov. 14	Dec. 2	19	563	1 for ague
13	22	„ 14	„ 8	25	563	1 for ague
14	15	Dec. 27 1882	1882 Jan. 13	18	600	1 for ague
15	22	Jan. 9	Feb. 4	27	624	1 for ague
16	22	Mar. 31	April 27	28	704	No
17	23	April 9	May 2	24	479	No
18	22	„ 22	„ 23	32	651	1 for ague
19	24	June 28	July 14	17	794	No
20	23	July 1	„ 31	31	912	1 for ague
21	25	Aug. 19	Sept. 7	20	252	No
22	25	„ 23	Oct. 7	46	848	1 for ague
23	24	Sept. 17	„ 7	21	644	No
24	24	„ 20	„ 6	17	877	No
25	24	„ 21	„ 6	16	877	1 for ague
26	23	Oct. 16	„ 28	13	662	7 for ague
27	24	„ 22	Nov. 13	23	907	No
28	27	„ 18	Oct. 30	13	903	No
29	24	„ 28	Nov. 13	17	913	No
30	22	Nov. 6	„ 22	17	652	No

Average stay in hospital, 24·3 days.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON FEVERS.

1. *A Treatise on the Continued Fevers.* By JAMES C. WILSON, M.D.; Physician to the Philadelphia Hospital and to the Hospital of the Jefferson Medical College, and Lecturer on Physical Diagnosis at the Jefferson Medical College; Fellow of the College of Physicians of Philadelphia, &c. With an introduction by J. M. DA COSTA, M.D. London: Sampson Low, Marston, Searle, and Rivington. 1881. 8vo. Pp. 365.
2. *Croonian Lectures on some points in the Pathology and Treatment of Typhoid Fever.* By W. CAYLEY, M.D., F.R.C.P.; Physician to the Middlesex Hospital, and to the London Fever Hospital; Lecturer on Medicine to the Middlesex School of Medicine. London: J. & A. Churchill. 1880. Pp. 126.
3. *Relapse of Typhoid Fever, especially with reference to Temperature.* By J. PEARSON IRVINE, M.D., B.Sc., F.R.C.P., Lond.; Assistant Physician to Charing Cross Hospital; Physician to the Victoria Hospital for Children; Fellow of University College; and Scholar of the University of London. London: J. & A. Churchill. 1880. Pp. 144.
4. *Études sur les Déterminations Gastriques de la Fièvre Typhoïde* Par le Docteur ANATOLE CHAUFFARD, Interne Lauréat (médaille d'or) des Hôpitaux; Membre de la Société Clinique; Membre de la Société Anatomique. Paris: J. B. Baillière et Fils. 1882. Pp. 108.
5. *Du Développement du Typhus Exanthématique, sous l'influence des Eaux Malsaines et d'une Mauvaise Alimentation; Observations recueillies pendant une Épidémie.* Par le Docteur S. ROBINSKI, Membre de la Société Médicale de Berlin; Membre Correspondant de la Société Médicale de Dresde, de Varsovie, &c. Paris: J. B. Baillière et Fils. 1881. Pp. 111.

6. *Remarks on Enteric Fever, extracted from the Annual Return of Sick and Wounded of the Bengal Presidency for 1877; Extract from the Surgeon-General's Annual Report for 1879 on Enteric Fever; Remarks on Diagnosis and Treatment of Enteric Fever.* Office of Surgeon-General of H.M. Forces, Simla. 1881. Pp. 47.
7. *A Report on the Fevers of Cyprus, Malta, and Gibraltar, being Appendix No. III. to the Army Medical Department Report for 1879.* By HENRY VEALE, M.D.; Brigade-Surgeon; Assistant-Professor of Military Medicine, Army Medical School. Pp. 16.

AMONG the "thousand ills that human flesh is heir to," that group of maladies to which the generic name of "Fevers" is somewhat loosely applied occupy the foremost place, whether we regard their wide-spread prevalence, the havoc wrought from time to time by the more malignant among them, and the suffering they entail, or investigate their ætiology and the phenomena which mark their onset, course, and termination.

In his magnificent monograph on "The Continued Fevers of Great Britain," Murchison writes:—

"The voluminous literature on the subject of Fevers proves the interest attached to them by medical men in all ages, down to the present day. Like other epidemic diseases due to a specific poison, Continued Fevers possess a peculiar attraction for the medical philosopher, inasmuch as their study involves an investigation, not merely of their symptoms, pathology, and treatment, but of the causes of their varying prevalence at different periods, and of the laws regulating their origin and propagation; while, at the same time, a knowledge of fever in the abstract is indispensable for the study and treatment of all acute diseases. 'In the whole range of human maladies,' said Graves, one of the greatest authorities on the subject, 'there is no disease of such surpassing interest and importance as fever.'"

We may be pardoned, therefore, if we notice at some length a collection of works on Fever in the abstract, which have issued from the home and foreign press within the past three or four years.

1. The most comprehensive of the works before us is Dr. James C. Wilson's "Treatise," which is one of "Low's Library of Standard Medical Authors." On the threshold it commands attention from the fact that Dr. J. M. Da Costa, the well-known Professor of the Practice of Medicine and Clinical Medicine at the Jefferson Medical College, and Physician to the Pennsylvania Hospital, contributes

an "Introduction" on the Management of Fever. Within the compass of seven pages Dr. Da Costa has managed to compress a great deal of common sense. He says—"We all agree that good nursing is essential; but do we all enforce it, and continue to superintend it? The physician who lays aside his watchfulness on these points, finds at any moment that he is combating with one of his chief weapons broken in his hand."

Cleanliness, cheerfulness, and regularity, are the three great qualities needed in the sick room. Equally important are ventilation and the admission of light. "To admit light," writes Dr. Da Costa, "is to influence the nervous system favourably, to keep the half-dreamy, wandering attention aroused, to procure better sleep by marking the alternations between day and night, and invoking the force of habit, to moderate often a delirium. To admit pure air is to give the respiratory functions their full play, and to furnish the changed blood with the means requisite for its revival. Moreover, it cools the atmosphere, which indeed, even in winter, should be kept at a very moderate degree of heat; and this, to the patient consumed with fever, is both grateful and salutary."

The diet varies, of course, with the character of the fever; but, except in typhoid, if the patient craves even solid food not actually indigestible, he may have it. Dr. Da Costa does not approve of allowing a fever-patient to drink *unlimited* quantities of water, for "very large supplies of water mean that the vessels of the stomach are constantly full, that the process of taking up liquid food is retarded—nay, that the desire for the really essential nourishment is greatly lessened or is changed to repugnance."

He is of opinion that, in determining the question of giving stimulants in fever "both pulse and heart sounds are much more available than the sphygmograph, which is quite unsuited to the exigencies of professional life in framing the treatment of fever cases."

As regards the treatment of fever by strictly medicinal means he believes that specifics are yet unknown, and that we are still forced to treat fevers on what is called the "rational plan"—that is, to treat chiefly the symptoms until the poison is eliminated or its results disappear. The general principles of treatment are based on indications, among which the following are of paramount importance:—

- (1.) To watch and keep up the secretions.
- (2.) To reduce or control elevated temperature.
- (3.) To control and influence the circulation.

On this last point Dr. Da Costa considers that alcohol steadies

the feeble heart more certainly than anything else, although quinine in small doses, or strychnia, aids. Digitalis has disappointed him, particularly in typhoid fever.

In concluding a chapter full of sound and practical advice, Dr. Da Costa dwells on three points—the necessity of the physician knowing how to *manage himself*; the skill which takes note of the epidemic influence prevailing, recognises that all cases are not alike because they bear the same name, and sees, therefore, not only the disease in the sick man, but *the sick man in the disease*; and lastly, the tenacity which never abandons a case while there is life. It will be observed that the author adds nothing new to our knowledge of the therapeutical treatment of fever, while he lays down plain rules for its management, which must command the attention of all practical physicians.

The space at our disposal will not permit us to criticise Dr. Wilson's work at any length. The general plan is almost identical with that adopted by Murchison in his classical monograph on the "Continued Fevers of Great Britain;" and, indeed, considering the extent to which Dr. Wilson has laid that masterpiece under contribution in his description of simple fever, typhus, typhoid, and relapsing fever, it seems strange that the name of Murchison is completely omitted from the preface. The novelty in the book is the grouping of Influenza, Cerebro-spinal Fever, and Dengue with the Continued Fevers, although "the time has not yet come" (it seems to the author) "to include pneumonia, diphtheria, and acute rheumatism, among the fevers."

Speaking generally, it is the historical portions of Dr. Wilson's treatise which please us most. From some of his conclusions as to the ætiology, particularly of typhus and enteric fever, we are compelled strongly to dissent, as when he says that typhus is "essentially an endemic disease" (page 96). Again, the statements that "climate has undoubtedly an influence upon the development and spread of typhus," and that "it is essentially a disease of cold and temperate climates," are surely at variance with what immediately follows—namely, "the season of the year appears to exert very little influence upon typhus," and "meteorological conditions exert little or no influence upon typhus" (page 251).

Nor can we agree with the dogmatic assertions of the author relative to the exciting cause of enteric fever. He asserts (page 121) that "*without doubt* the fever-producing principle is *an organised germ, a micro-organism, a protomycete, a contagium*

vivum;” and immediately afterwards he admits that “the nature of the germ which produces enteric fever is *unknown*.” Surely these are contradictory statements. Again, he says—“It” (that is, the germ which produces enteric fever), “*is invariably derived from a previous case of enteric fever*.” He has, happily, the candour to add that “from the assertion that *the specific cause of enteric fever is invariably derived from a previous case of the disease*, many observers, even among the most recent authorities, strongly dissent. Among them Dr. Murchison is most prominent.”

We have long believed in the doctrine of the *de novo* or pythogenic origin of enteric fever in addition to the propagation of the disease by contagion, nor will Dr. Wilson’s argument shake our faith. But to this subject we shall presently return when speaking of the second work on our list.

There are some manifest misprints in the book, which are likely to mislead beginners, such as the statement on page 96 that “the eruption (of typhus) is rarely absent, and *disappears* between the fourth and the seventh days;” and a still worse mistake on the very next page, where it is said that in typhus “convulsions sometimes occur, due to *pyæmia*”! Of course this is a misprint for “*uræmia*.”

We would be sorry, however, if the faults in Dr. Wilson’s treatise to which we have called attention should prejudice our readers against what is, on the whole, a valuable contribution to the bibliography of Continued Fever.

2. Dr. Cayley’s three Croonian lectures are devoted to the ætiology, pathology, and treatment of typhoid fever, and are an excellent summary of the present state of medical knowledge and opinion on the subject. We wish that physicians in the position of our author would abandon, once for all, the inaccurate and misleading term “typhoid” fever. Unfortunately the clumsy “*dothienenteria*,” or “*dothienenteritis*,” as well as the convenient and expressive “enteric,” are tainted with the vice of foreign suggestion; and with a certain class of Englishmen this objection is fatal to the early adoption of an improvement, however obvious. As regards Dr. Wood’s suggestion, it is difficult to imagine any tenable objection to the use of the term “enteric,” or any valid reason for retaining “typhoid.”

The bacillo-maniacs do not seem yet to have got definite hold of any specific microparasite to which they can attribute the ravages of

enteric fever, nor has chemistry isolated an animal poison capable of producing the disease. What the poison is, then, we know not; some of its properties, however, may be stated with tolerable certainty:—(1) It is capable of multiplication within the system; (2) it is contained in the stools of the patient; (3) under favourable conditions it retains its potential activity for an indefinite time after its discharge from the body, and may be capable of multiplying in such circumstances; (4) “in all probability it is particulate, and not either liquid or gaseous.” Everyone knows the great question (one side of which was taken by Murchison and the other by Budd)—Can the specific poison be generated *de novo* in decaying animal matter, or must every case, occurring now, have had a predecessor like itself? The main arguments on both sides are stated by Dr. Cayley with great clearness; and he cites several cases, worthy of careful notice, in which all the conditions necessary for the generation of the specific poison failed to generate it *until* the presence of a patient affected with the disease was superadded. He concludes that “the weight of evidence is against the *de novo* origin of the disease.” This conclusion surprised us. We doubt if it will be accepted by the majority of physicians. We are sure that those who have studied enteric fever in intertropical and subtropical climates will have arrived at a different conclusion. Let us add that (as we have previously pointed out in these pages) a new ætiological question, untouched by Dr. Cayley, has arisen for discussion and solution. Can a disease indistinguishable, clinically and pathologically, from enteric fever arise from climatic causes alone, independently both of putrefying animal material and of a previous case of the disease? The heat of debate has been transferred to this point from the older one.

Of the communicability of the disease in some way, from the sick to others, there is no doubt in the mind of any physician, but there is still considerable difference of opinion as to the mode in which communication is effected. Dr. Cayley lays it down as “absolutely certain that an epidemic of typhoid is never caused by the disease spreading by direct contagion, as epidemics of small-pox, scarlatina, and typhus are.” He states that he has generally succeeded in tracing to indirect contagion instances of apparently direct communication. We may cite the following instance in illustration of the use of the terms “direct” and “indirect” contagion, and of referring to the latter a case which *primâ facie* was debitable to the former:—

“A boy was admitted into the Middlesex Hospital, under my care, on March 27th of last year, suffering from a very severe attack of typhoid. For several days he lay in an unconscious condition, and during this time he had very profuse diarrhœa—twelve to twenty liquid motions daily, which were, for the most part, passed in the bed. In the next bed was a boy aged six, who had been admitted on April 16 with acute renal dropsy and bloody urine. He was kept strictly confined to bed, and never got up to go to the water-closet, down which the motions of the typhoid case were thrown. On May 11, when he was convalescing, the dropsy having disappeared and the albumen much diminished, he was seized with typhoid fever, and passed through a moderately severe attack. This at first sight appeared to be a case of direct contagion, but I have no doubt that the true explanation is this:—The bedding of the first patient was constantly kept saturated by his liquid motions, and, though every care was taken to change the linen frequently, it was obvious, from a distinctly fæcal smell which was always present, that the bedding or mattress remained contaminated, and thus time was given for the poison to develop its infectious properties. Another patient in the same ward, admitted for acute rheumatism, was also attacked by the fever. He occupied a bed on the opposite side, and never came near the first case, but, being convalescent, he used the water-closet, down which the motions of the typhoid case were thrown, and it so happened that at this time the closet was out of order, the contents were retained, and an offensive smell was constantly present. Hence, I think, there can be no doubt but that he was infected by the emanations from the evacuations of the first case.”—(P. 20.)

We may sum up our author's views as to the mode of communication of enteric fever in the following propositions:—1. The disease is not directly communicable. 2. The stools are the means of communication. 3. Recent stools are innocuous. 4. The poison is generated in the evacuations within twelve hours of their discharge. In these statements we concur, but we are unable to accept as conclusive the evidence adduced for the *de novo* production of enteric fever by eating diseased meat. It satisfies him, however. He believes that “the flesh of calves suffering from typhoid fever, when in a state of decomposition,” is capable of communicating the disease to the human subject, and he considers it highly probable that the milk of similarly diseased cows may have the same power.

Enteric fever is, in a large proportion of cases, spread by drinking water. In such cases the period of incubation is fixed by Dr. Cayley at “about fourteen days,” but deviations from this standard

are common enough. There is obvious difficulty in establishing the exact onset of the disease; and also in "excluding in a disease like typhoid, of which the contagion is indirect, other sources of infection than that which is supposed to have caused the attack." But independently of these difficulties in determining what the interval between reception of the poison and manifestation of the disease is, the interval itself is variable. Six days may be taken as the limit in one direction, and twenty-one in the other. This variability in period of incubation enteric fever exhibits in common with scarlatina, while in the other exanthemata it is nearly constant. Four possible causes of variability are enumerated, the first and most important being the mode of infection. Direct insertion of the poison into the blood would probably act most rapidly; but this case is unlikely to occur in enteric fever. Of the two ways in which the poison ordinarily enters the system, through the respiratory mucous membrane and through the intestinal glands, the former is the more likely to be followed by a shorter period of incubation. It is in cases where drinking-water has been the means of propagation that unusually long periods have been noted; and, on the other hand, unusual shortness of incubation has most frequently followed exposure to emanations from decomposing sewage. Again, temperature influences incubation, hot weather shortening the period, and febrile disturbance by raising the body-heat having probably a similar result. The other causes are constitutional condition (menstruation, for instance), and idiosyncrasy. This last is illustrated in almost every case in which several persons are simultaneously exposed to the action of the poison. The intervals, before symptoms appear, vary widely. This variability, we should add, may be due to various doses of the poison taken in; but this is a cause of variability in the period of incubation which Dr. Cayley dismisses summarily, on the ground that "we see, both in this and in other fevers, that the period of incubation of the mild and severe cases is the same." Something might be said on the other side of this question.

The greater part of the second lecture, devoted to "the Clinical and Pathological Phenomena" of enteric fever, is taken up with those which are common to it with many other febrile affections. These (with one exception) it will be sufficient for us to enumerate. They are—1. "A granular or albuminous infiltration of the cells of most of the glandular organs," and a similar change in the striped muscles—failure of the heart's action, due to the latter,

being the most important result, and that which has received most attention from clinical observers. 2. Zenker's waxy degeneration of the striped muscles, especially of the muscles of the abdominal wall, the thigh-adductors, the diaphragm, and the tongue, the heart itself being also occasionally affected. 3. Diminution of red blood-corpuscles. 4. Wasting, from diminished ingestion and assimilation of food, falling upon the fat and the albumen of the blood, lymph, and interstitial fluids, in a less degree on tissue albumen; and from increased consumption, due to the fever, and affecting both fat and albumen. 5. Increased temperature.

Only slight and temporary changes in the temperature of the body can be accounted for by changes in the conditions of the production or dispersion of heat. The persistent high temperature of enteric and other fevers must be attributed to disturbance of the regulating functions of the nervous system; but the regularity of the variations of temperature shows that the function is impaired merely, not abrogated or suspended—at least not in any but exceptional cases:—

“The view has been put forward, and widely accepted, that in typhoid fever the regulating point has been simply raised and adapted, as it were, to a temperature say five degrees above the normal. If, however, we compare the behaviour of the temperature in this disease and in health, this view becomes untenable. In the first place the temperature has become more labile—it can easily be raised or depressed by causes which would have no effect in health. Thus, changes in diet, slight exertion, mental emotion, will often cause great temporary alterations. The same point is shown by the effect of remedies. A dose of thirty or forty grains of quinine will hardly affect the temperature in health, but in typhoid fever will reduce it three or four degrees, and keep it down for several hours. Secondly, we miss in fever that compensatory reaction which Jürgensen has shown to occur in health, where the temperature is artificially reduced. According to his observations, if a healthy man be placed in a cold bath the temperature may be reduced many degrees, in proportion to the coldness and duration of the bath, and it continues to sink for some time after removal. Soon, however, it again rises, and continues to do so till it has gone above the normal point. If the bath be repeated the same phenomena show themselves, but after a certain number of repetitions the reactive rise counteracts the chilling effect of the bath, so that further immersion no longer reduces the temperature of the rectum. In typhoid this compensatory rise does not take place, or, at any rate, to a much less degree; and after fifty or a hundred and fifty

repetitions the last bath reduces the temperature as effectually as the first. Hence, in typhoid fever we regard the regulating influence as weakened, or at any rate rendered inefficient for the new conditions caused by the fever, but neither abolished nor set at a higher point.”—(P. 58.)

Assuming, then, that the nervous function which regulates temperature is impaired, the question arises—Why is the result exalted rather than depressed temperature? For this is the general rule, though in exceptional cases, and even in exceptional epidemics, the temperature may be below standard throughout. The answer is not very clear. There is, unquestionably, increased tissue-combustion; but there is reason to believe that heat-dispersal is also increased in fever. We must be content with the assumption that the balance of the two processes—the generation and the dissipation of heat—is in some way disturbed, so that the superfluous heat is not conveyed away, and the temperature rises; and to the exalted temperature most if not all of the pathological results enumerated above are attributable. Hence important practical indications for treatment.

Passing from phenomena common to enteric fever with other febrile diseases, the first peculiarity which strikes us is the irregularity of this affection, as compared with other zymotics. This irregularity Dr. Cayley attributes to two causes—the existence of two distinct fevers, the primary due to the specific poison and the secondary due to septicæmia from intestinal ulceration and gangrene; and, secondly, to the frequency of relapses. The former cause is not peculiar to enteric fever, variola and scarlatina also exhibiting analogous primary and secondary fevers. In enteric the primary fever lasts long and is overlapped by the secondary; the supervention of the latter being marked by change of type of the pyrexia, which becomes remittent with marked diurnal variations. This occurs generally in the third week, “sometimes even as early as the fourteenth day.” It is often accompanied by profuse sweating and sudamina. If this secondary fever depends, as our author believes, on intestinal gangrene, it affords a valuable indication for treatment. Alcohol, if not previously administered, should be given freely at this stage of the disease, and opium will cease to be contra-indicated. There is no constant relation between the intensity of the primary fever and the degree of local lesion on which the severity of the supervening secondary fever depends. Slight primary fever is often followed by very severe intestinal

mischievous. "Hence the well-known difficulty of forming a correct prognosis in the early stages of the disease, and the importance of treating the milder cases with the same precaution as the severe ones."

Relapse is very common in enteric fever, occurring at any time "up to three or four weeks after complete defervescence." The proportion of relapses is very variously stated, and depends in some measure on treatment. They are more frequent when the temperature is kept down by baths or medicine. Relapse must be distinguished from recrudescence due to accidental causes; but we shall recur to this subject in noticing the next work on our list. Suffice it to say here that true relapse is due to re-infection of the blood with the specific poison, not to dietetic errors, emotion, or other external excitant.

The third lecture is devoted to Treatment, and the greater portion of it to treatment by methods directed to reduction of temperature. The statistical results of the "expectant" treatment, which "consists in not treating the disease at all," are very fully given (pp. 89, 90), and with the results "we have little reason to be satisfied." "Of late years, however, a plan of treatment has been revived which aims at controlling the fever and preventing its injurious effects on the organism by keeping the temperature throughout the whole course of the disease under a moderate febrile heat." That this can be done, with safety to the patient, by means of baths, is the conclusion justified by experience. Statistics appear to demonstrate that the mortality in enteric fever is enormously reduced by the antipyretic treatment. Dr. Brand's figures, for instance, show that the mortality in 8,141 cases treated in this way was 7·4 per cent., while under ordinary treatment it is not less than 16.

The history and the mode of application of this mode of treatment are very fully given in Dr. Cayley's third lecture; as well the contra-indications, and the advantages and disadvantages of the use of antipyretic drugs in addition to the baths. For these matters we must refer our readers to the work itself, to which we have already devoted a large proportion of our space, though not more, in our opinion, than it deserves.

3. Dr. Irvine's work on "Relapse of Typhoid Fever" is a republication of papers which appeared in the *Medical Times and Gazette* in 1879, and we have to regret that the author had passed away

before they appeared in their collected form. In the introductory chapter we are cautioned against confounding "relapse of typhoid" with "relapsing fever"—a mistake not likely to be made at this time of day; and the distinction between relapses and recrudescences is pointed out—the former being recurrences of the original attack, with more or less resemblance to it; the latter irregular rises of temperature due to accidental causes. To the received opinion that in relapse there is a clear interval of apyrexia between it and the primary attack, exception is taken—cases of true relapse occurring without appreciable apyrexial interval, and cases of false relapse or recrudescence after distinct intervals of normal temperature. Relapses are by no means infrequent in enteric fever—second relapses not uncommon; third, and even fourth, relapses occasional. In most cases the resemblance to the original attack is distinct, the stools are characteristic, and the specific eruption is present. As to its relations to the severity of the primary attack, there is an important difference of opinion between English and foreign observers, the latter maintaining that relapse is more common after severe attacks, which is denied by Dr. Irvine and others in these countries. The duration of relapses as compared with that of primary attacks is another undecided point, most authorities being of opinion that relapses are shorter.

We must pass over the five chapters devoted to details of cases of relapses, single and complicated, calling special attention to Chap. V.—"Examples of Recrudescence, of Intercurrent Attacks, of various Irregular Relapses, and of conditions likely to be confounded with Relapse of Typhoid Fever." The final chapter contains the author's general conclusions and remarks, and some of these we shall briefly notice. Repeating that relapse in enteric fever "is far more common than is usually supposed," he urges frequent observations of temperature as essential to accurate discrimination. As to the duration of the apyrexial interval between the primary attack and the relapse, he concludes that there is no certainty. In 29 of his own cases, out of 46, the interval was accurately marked—it averaged a fraction over five days; but in 3 cases the duration was ten days; in 4 it was inappreciable. Dr. Murchison's average interval, deduced from 53 cases, was eleven days. This uncertainty should lead to most careful watching of the patient after defervescence, and observation of the temperature. "In almost all the cases of uncomplicated typhoid the temperature was, during the 'intervals,' normal both morning, noon,

and night, and oftentimes subnormal—below 98° Fahr. This is a valuable clinical fact, because most of the acute specific diseases end in subnormal temperatures, and any unexpected rises which cannot be explained should guard us against the contingency of relapse.”

The question whether relapse predisposes to relapse is still unanswered. Our author goes no further than to say that after a relapse a second “should be looked for and guarded against. Of 31 patients in my series 10 had a first relapse, and at least 5 had a third relapse, while in 1 case a fourth relapse occurred.” The duration of relapses is uncertain also. Between twenty and twenty-one days is the average deduced from the author’s cases; Murchison’s was about fifteen days. Later relapses are shorter than those preceding. The highest temperature in relapses occurs on the fifth day, remaining at nearly the same level to the eighth or ninth, “when it falls decidedly and, beyond all doubt, critically.” Such fall is a most favourable sign, being absent in fatal cases. A rise invariably follows this fall, a third stage of the disease beginning, with fresh fever, from the ninth day. On the tenth day the temperature may be almost as high as ever before, but thence remission sets in, and continues steadily until the relapse is ended. We shall conclude our notice of Dr. Irvine’s work with a short quotation bearing on the therapeutical value of diagnosing obscure relapses:—

“I repeat that the thermometer enables us to guard against mischievous treatment, and that it may claim to be frequently our chief guide in dieting patients for days and weeks after the apparent termination of typhoid fever. If the thermometer declares a recurrence of fever resembling relapse—nay, in the least suspicious of relapse—it is clearly one’s duty to be as careful in the dietetic management of the patient as in the primary disease. Mild and severe cases should know no distinction in this respect, for in both there are local lesions, which errors increase, with fatal results. And it should be ever remembered that high temperature is not the only evidence of danger and of the necessity for care.”—P. 137.

4. Dr. Chauffard’s essay is devoted to the secondary lesions of enteric fever which affect the stomach—a subject which has not, he thinks, received the attention it deserves. He does not, however, succeed in convincing us that it is a very important one, though he brings to notice some interesting points connected with

this complication. He concludes his pathological description of these gastric lesions with the remark that though they are almost invariably present when certain characteristic symptoms (to be described presently) are observed, they may exist in cases in which no symptom indicates their presence, adding that the same may be said of the characteristic intestinal lesions.

The question whether the gastric secretion undergoes change in quantity or in chemical properties during the febrile state does not seem to be decided. Beaumont found that solid food remained undigested in the stomach, when the subject of his observations and experiments was suffering from fever, from twenty-four to forty-eight hours. Lussana (in 1862) stated that the production of the peptic ferment is diminished or arrested in fever. Schiff found the gastric secretion of dogs, in which he had produced fever by septic injections, destitute of all digestive properties. On the other hand, Pavy and Hoppe-Seyler assert that they have found infusions of the gastric mucous membrane from fever patients, and enteric fever patients in particular, active in digestive power, and rich in pepsin; and, in 1872, Manasseïn published a series of careful experiments upon dogs in which fever had been induced by septic injections, subcutaneous or intravenous, in which he found the acidity of the gastric secretion obtained by the introduction of sponges into the stomach notably diminished, but the activity of the artificial gastric juice prepared by infusing the mucous membrane normal except for the digestion of fibrin. What the changes are, therefore, which the gastric secretion undergoes in fever cannot be stated with any approach to certainty; but that some pathological alteration in the chemical functions of the stomach does occur is evident from the thirst, the loss of appetite, the craving for acid drinks, while structural lesions are indicated by other signs.

The first of these signs is epigastric pain, sometimes complained of by the patient after drinking or movement, but in most cases felt only on deep pressure with the ends of the fingers. The pain is deep, dull, oppressive, sometimes productive of severe dyspnoea. In well-marked cases this pain is less tolerable than the ileo-cæcal pain. In many instances this pain is the only one elicited by abdominal exploration; in some it is associated with pain in the right iliac fossa or the left lumbar region, or in both. The symptom belongs to the early stage of enteric fever, and in favourable cases tending to recovery it disappears during or at the end of the

second week. It occurs, according to Dr. Chauffard, in 50 per cent. of cases of enteric fever.

Another symptom indicative of gastric lesions is pain in the neck, along the course of the pneumogastric nerves. This pain or tenderness is never felt without pressure, and this is best applied over the sternal insertion of the sterno-cleido-mastoid. It may be considered an extension of the irritation before described, and is not an invariable accompaniment of the other. It generally disappears before it; but, in cases where the gastric lesions are severe, it may persist to the close.

Vomiting may be a symptom of gastric lesion, but is not so necessarily. It may result from peritonitis, from pulmonary complications, as pneumonia or pleuritis, or from cerebral or meningeal trouble, the last being rare; or it may be caused by the administration or excessive use of powerful drugs, as quinine. Setting aside these and other causes of gastric intolerance not the direct result of the fever, there remains a residuum of cases of vomiting attributable to specific lesions of the stomach, amounting to 33 per cent. according to Louis, to 36 per cent. according to Murchison, who adds (we quote at second-hand from Dr. Chauffard):—"In 12 cases out of 63 the vomiting constituted one of the earliest symptoms. In the majority it was merely accidental, but in 8 cases it was prolonged and very painful. It was generally accompanied by some pain and tenderness at the epigastrium." In relapses this is one of the earliest indications, according to our author. In children vomiting is observed in about half the cases treated, from the first to the eighth day, generally on one of the first three days.

The essay concludes with sixteen cases, and two well-executed pathological plates are added.

5. We shall preface our brief notice of Dr. Robinski's pamphlet with a quotation from Trousseau's clinical lecture on Typhus (XVI., Vol. II., Trans. New Syd. Soc.):—

"I have said that typhus seems always to arise under the influence of the same causes. This is a point upon which all physicians are agreed. All admit that the morbid matter, the poison, the miasm which engenders the disease, can be spontaneously developed wherever great masses of human beings are accumulated, as in the great centres of population, in armies concentrated within a space too small in relation to the number of persons, in prisons, and in ships. This is particularly the case in

ships used as penal hulks, if the men are exposed to bodily fatigue, mental anxiety, moral suffering, and dieted with food bad in quality and insufficient in quantity. But I also stated that when typhus is once developed in a locality, it often spreads by contagion, when one cannot point to any other cause for this propagation taking place. Bear also in mind that in respect of typhus, as in respect of all other contagious diseases, it is not necessary that the contagion be transmitted by persons who have the disease; it may be carried by individuals who have not, and who have never had, the malady, the morbid germ of which they are the means of transmitting.”—P. 421.

So Trousseau; not so Dr. Robinski, of Berlin. In his preface he states that he anticipated strong opposition to his new views on the ætiology of typhus when he first published them in 1874—“ce qui arrive toujours dans des cas semblables”—but that the most distinguished practitioners in Germany have adopted his principles. He has now had the first two sections of his work, “Zur Ætiologie des Typhus exanthematicus,” translated into French, and prefixes the following quotation from Dr. Chauffard’s paper, “De l’étiologie du Typhus Exanthématique:”—“De nouvelles observations sont nécessaires pour arriver à de pleines convictions sur ce sujet. Il faut attendre les lumières qu’elles apporteront avant de se prononcer sur l’étiologie définitive de typhus.” Dr. Robinski’s new light, which we shall endeavour to reflect upon our readers, is emitted from his observations of an epidemic of nearly 150 cases, occurring near Neumarkt, in Western Prussia, in 1867 and 1868. We are obliged to take his word for it that the disease was genuine typhus—“typhus exanthématique,” “typhus pétéchiâl”—as no details are given of course or symptoms; and yet the account he gives of its causation, according to the views of ordinary physicians, does not agree with Trousseau’s description. “It has been asserted,” he says, “that the disease is *directly* due to bad water or bad food.” His discovery is that there is another ætiological element besides these, “more frequently present, and of much higher importance not only in exanthematic typhus, but also in all contagious diseases” (p. 9), and this “auxiliary” is—Contagion! Out of this slender material he has contrived to blow a bubble of considerable size, or rather two bubbles. He devotes one essay or chapter to bad water, and another to unwholesome food; and though we cannot rate his “new views” quite so highly as he does himself, we shall be able to pick out two or three grains of wheat from his two bushels of chaff.

The epidemic observed was most severe in the village of Tylitz, where almost the entire population was attacked. In the environs of the village cases were few. In Tylitz the disease was virulently contagious, and spread only by contagion, persons who had avoided the neighbourhood of the sick escaping the disease. A patient, however, sent to a neighbouring village did not, although no precautions were taken, communicate the disease to his relatives or any other inhabitant. Again, sporadic cases occurred in the vicinity of Tylitz, but in no case proved contagious. There was no scarcity of food in Tylitz, or crowding, or special fatigue, or depression; but there was stagnant water used by the villagers, while good water was available for those outside. It was further observed that individuals in Tylitz who did not drink the foul water escaped the epidemic, though fully exposed to risk of contagion. There were two classes of persons in the village who escaped the disease—those who drank the stagnant water but were not exposed to contagion, and those who were exposed to the contagion but did not drink the water. Some “noxious material,” concludes Dr. Robinski, “must have penetrated into the system from the unwholesome water, producing conditions, physical or chemical, rendering contagion effective, which without them would have remained inactive.”—(P. 22). This *matière nuisible* may remain dormant for an indefinite period, perhaps for years. For instance, cases of typhus occurring in French soldiers in 1866 were almost confined, he assures us, to men who had served in the Crimea, and had there, eleven or twelve years before, admitted “noxious material” into their organisms. Further, the disease may remain dormant for months in spite of exposure to contagion, and then explode without appreciable exciting cause. For the possible or probable genesis of the specific contagium of typhus we are referred to our author’s “Entstehung und Verbreitung des contagiösen Krankheiten.” We learn nothing here.

The second section is devoted to the effect of unwholesome food in the production of typhus. There are certain products of the decomposition of organic substances which, like foul water, render the constitution into which they have obtained entrance liable to receive the contagion of the disease. Our Dublin Committee, which, reporting on our fever of 1847, attributed it to scarcity of food and overcrowding, was all wrong. Bad food and crowding predisposed, specific contagion developed the fever; but here also we seek in vain for any explanation of the origin of the contagion.

Typhus invariably arises, according to Dr. Robinski (as most physicians suppose smallpox to arise), from a previous case.

6. We are indebted to the courtesy of Surgeon-General Crawford for a contribution to the study of "Enteric Fever in India," consisting of extracts from various official papers. The existence and prevalence of a disease indistinguishable from European enteric fever, even though the characteristic eruption is often absent and diarrhœa not infrequently, may be taken as established. It is on the ætiology of the disease that opinion is divided; and it is with reference to this point that we shall briefly examine these reports. The first paper in the collection argues that, as enteric fever is exceptionally rare amongst natives of India, we cannot look for the source of infection of European soldiers in "minute particles of fæcal matter, dried and pulverescent, blown about by the wind, and deposited in wells and elsewhere." The statistics of the Bengal jail population are quoted as proving the trifling liability of natives to the disease, although it is obvious that, on either the Budd or the Murchison theory of infection, prisoners are most unlikely to suffer, in consequence of their sanitary arrangements and their seclusion. The careful conservancy of military cantonments, barracks, &c., precludes, it is maintained, the possibility of fæcal contamination of air or water, as though soldiers never strayed beyond military limits, or every square yard within these could be kept as free from fæcal pollution as a drawing-room floor. "Filtration of water is never omitted." There is filtration and filtration, and water has been found to be fouler in military hospital filters than in the wells from which it was drawn. Arguments of this kind do not disturb European conclusions as to the ætiology of the disease. Failure to "trace out the intimate connexion of this disease with filth causes, or specific infection, with which, according to European authorities, it is invariably associated," would be a valid argument against the existence of such association only if the failure were universal and invariable, and this it certainly is not. Take one illustration of the possible source of infection (p. 15), which applies to almost any outbreak in India, viz. :—"It is possible that the disease may have originated in the bazaars, as a number of the men stroll into the regimental and sudder bazaars every evening, and regale themselves on ginger pop and similar beverages, prepared from the unfiltered and generally filthy water of some bazaar wells, which, after heavy rain,

become still more polluted, as they are in no way protected from surface water," &c. And yet it is argued that the enteric of the British soldier in India is not due to fæcal contamination, because barracks are clean, or to specific infection, because the disease is rare amongst the natives!

The second paper in this collection (*Extract from the Surgeon-General's Annual Report for 1879, on Enteric Fever*) gives tables showing the influence of age and recent arrival in India in the ætiology of the disease, from which it is inferred that—

"The susceptibility or vulnerability of the European constitution in India is at its maximum during the first year, decreases during the second and third, and is practically nearly exhausted between the third and fourth years of an Indian residence; and it may be inferred from statistical deductions that it makes but little difference, so far as the European soldier's chances of contracting enteric fever are concerned, whether he be twenty or twenty-five years of age on landing."—(P. 22.)

The relation of malaria to enteric fever is discussed in page 27 *et seq.* It is concluded that though there is probably no antagonism between malaria and the poison of enteric, there is no reason to suppose that there is any connexion. There is no relation between the admission rate for malarious fevers and that for the other disease in any corps or station. Ague spares no age; enteric is a disease of youth. Quinine cures ague, but has no control over the other.

The following account of an outbreak of enteric fever in the 70th regiment, at Subathu, in July and August, 1879, appears at first sight to be a case of causation by eating diseased meat; and we extract it and Dr. Crawford's conclusions as illustrative of the fallacies which beset the ætiology of the disease:—

"Enteric fever prevailed largely among the men of the 70th Regiment at Subathu in July and August, 1879. A fatal disease made its appearance about the same time, and prevailed extensively, among the sheep maintained by the commissariat for the supply of mutton to the troops. This disease in the sheep was characterised by fever, temperature ranging from 103° to 107° , diarrhœa and emaciation; and in some carcasses that were specially examined in addition to other lesions a diseased state of the intestinal and mesenteric glands was discovered. Out of about 500 men, to whom a ration of mutton had been supplied once a week, twenty-one had enteric fever. The proportion of men attacked, over twenty-four years of age, and two years' Indian service, was unusually large. On the presence of disease being discovered in the sheep, the issue of mutton was

prohibited, and precautions were taken to secure that diseased sheep should not be slaughtered for food. The issue of this Subathu mutton was stopped on August 3rd, the last case of enteric fever occurred on 20th August—that is, eighteen days after the last issue of mutton. The drinking water was pure, the source of water supply at Subathu was reported to be quite satisfactory. On the whole, the circumstances as detailed made up a very consistent and forcible history in favour of the view that the enteric fever among the troops was attributable to the use of diseased meat, and to a local observer the foregoing facts could not fail of producing a definite and strong impression, if not conviction; but on reviewing the medical occurrences connected with the 70th Regiment, as a whole, I think this view would be certainly held to be unproven and most probably incorrect. Of thirty-four cases and nine deaths from enteric fever in the 70th Regiment during 1879, the first case (not fatal) occurred at Multán on the 26th March; six admissions and four deaths while on the march to Subathu; three cases (one fatal in July) at Dugshai, and twenty-four admissions, of which four were fatal, at Subathu, where the first case admitted occurred on 21st April, and the last on 20th August. The head-quarters of the regiment arrived at Subathu on the 23rd May, 1879. It is evident that the disease, therefore, cannot be said to have been originally contracted at Subathu, but was, in fact, carried there.”—(P. 30.)

7. Brigade-Surgeon Veale has sent us his Report on Fever in Cyprus, Malta, and Gibraltar, which forms an appendix to the A. M. D. Report for 1879. As to Cyprus, the strength of the three regiments, and details, which landed there in July, 1878, is not stated, so that we cannot accurately estimate the effects of the climate upon their health. Before the end of the year, however, Dr. Veale informs us, 96 invalids were received at Netley, “in addition to many others who had been sent home as *time-expired* men.” Early in 1879, 25 more were received, and, in the course of the year, 106 others who had served in Cyprus and been removed thence to Gibraltar or to Halifax. Nine-tenths of those direct from Cyprus were suffering from the effects of malaria, and the same was true of a large proportion of the others, the remainder exhibiting a special form of fever. It was noted that remittent fevers preponderated in Cyprus, intermittent at Netley, showing that the type of disease had undergone a change. Two cases proved fatal in England from dysenteric complication, and three from fever; and this was the total Netley mortality of Cyprus fever.

Rheumatism was a complication which did not occur in any of the cases which had not been, before their Cyprus experience, in Malta, and after it in Gibraltar; and every year cases are admitted from these two stations presenting rheumatic symptoms like those observed in the men from Cyprus. There is, therefore, reason to believe in the existence of a hitherto unrecognised (at least in official nomenclature) form of fever, popularly called "Malta fever," or "Rock fever," which begins like a mild quotidian, but becomes protracted and severe, and is characterised by rheumatoid pains in the back and limbs. It is clearly not enteric fever, nor dengue, nor relapsing fever, to which it bears considerable resemblance. Its ætiology is unknown; and, though old enough (our author finding a description of it in Hippocrates' "Epidemics"), it has not yet received a name. Dr. Veale suggests *febris complicata*, as expressing "the most salient feature of the disease," without implying any "theory as to its nature or its cause."

RECENT WORKS ON SURGERY.

1. *The International Encyclopædia of Surgery.* Edited by JOHN ASHHURST, Jun., M.D., Professor of Clinical Surgery in the University of Pennsylvania. Vol. II. London: Macmillan & Co. 1882.
2. *A System of Surgery: Pathological, Diagnostic, Therapeutic and Operative.* By SAMUEL D. GROSS, M.D., LL.D., D.C.L., Oxon.; LL.D. Cantab.; Emeritus Professor of Surgery in the Jefferson Medical College. Illustrated by upwards of sixteen hundred Engravings. Sixth Edition. Thoroughly revised and greatly improved. In Two Vols London: Smith, Elder & Co. 1882.

1. THE editor of this great surgical work is to be congratulated on the satisfactory progress which he is making in its publication. It is to be regretted that death has been busy among his associates, and that the names of Otis—who will ever be remembered as the author of the superb "Surgical History of the (American) War"—and of Lenox Hodge, are missed from this second volume, save in a few lines of editorial preface. The article by J. T. Hodgen, of St. Louis, had been prepared before his sudden death, and the editor has done his best to find competent successors in labour to the other two distinguished men who have passed away.

The most remarkable series of articles in the present volume is that which is devoted to the various forms of venereal disease—the several papers extending through about one-third of the entire bulk. The space is certainly not too lavishly bestowed. The subject in its different bearings—in its relation to the individual and to the public—deserves all the attention that can be devoted to it. The articles are as follow:—Gonorrhœa, by J. W. White, M.D.; the Simple Venereal Ulcer or Chancroid, by F. R. Sturgis, M.D.; Syphilis, by Arthur Von Harlingen, M.D.; Bubon d'emblée, Venereal Warts, Venereal Diseases in the Lower Animals, by H. R. Wharton, M.D. This gives a goodly array of well-known names, and a judicious division of work. The articles are really admirably full, giving a comprehensive account of venereal disease in all its details, and the methods of treatment that have been recommended by authors. There is an ample bibliographical list for those who may wish to read further. Mr. Howard Marsh, Mr. Bryant, and Mr. Watson Cheyne, are the English representatives amongst the authors in this volume, the rest are all American. These two last-named surgeons write on wounds, and the antiseptic method of dressing wounds, respectively, and in some degree, at least so far as treatment is concerned, these essays overlap. Mr. Bryant, of course, takes the opportunity to strike out very bitterly against the so-called “antiseptic surgeons,” and to scoff at the results which they claim in operative surgery. There is, no doubt, ground for dissenting from the “moral certainty” which is claimed in operative procedures under the Listerian method, but we are strongly of opinion that operations may be performed with such precautions which ought not to be undertaken under any of the modifications which are in vogue, and which appear to have nothing to justify them except the desire of their authors to gain some notoriety by dissent. It is something, at all events, to have the admission from Mr. Bryant, in speaking of the greater success of surgery in these days, “that of the many factors which have brought about this result, the employment of antiseptics stands foremost, and if we are not indebted to Mr. Lister for their use, we are undoubtedly indebted to him for the able and persistent manner in which he has both advocated their employment and demonstrated their value.” We thought Mr. Bryant had got beyond “smiling at his (Lister's) theory,” which has certainly been accepted by the great body of surgeons, whether they adopt his mode of dressing or not.

In Mr. Cheyne, however, we have a devout disciple, who has

given excellent proof already of his fitness not only to follow but to preach. His able volume on aseptic surgery is sufficiently well known; and the paper which he produces here contains in a short space an excellent exposition of the great principles which underlie the modern methods of wound-dressing. He is wise enough to deny what is too often alleged, that the Listerian dressing, as at present employed, cannot be surpassed. Whatever modifications may yet be introduced, the Listerian principle must remain the same—"that the causes of fermentation in wounds are particles from the outer world, and that in order to abolish the risks due to fermentation in wounds, the proper method of treatment is to prevent the entrance of the living causes of fermentation into them." We commend this paper as a specially practical one for those who are uninformed as to the precise details of the Listerian plan of dressing wounds.

There is a very good article on Gunshot Wounds by P. S. Connor, M.D., of Ohio. The other articles are by Hunter Maguire (Contusions), J. H. Packard (Poisoned Wounds), J. R. Bill (Sabre and Bayonet Wounds), Thomas George Morton (Effects of Heat), J. A. Grant (Effects of Cold), Howard Marsh (Abscess), J. T. Hodgen (Ulcers), E. M. Moore (Gangrene and Gangrenous Diseases), J. C. White (Surgical Diseases of the Skin and its Appendages), Joseph W. Howe (Diseases of the Cellular Tissue), Charles B. Nancrede (Injuries and Diseases of Bursæ).

There are several chromolithographs, and about 150 engravings.

2. It is just ten years since the fifth edition of Gross's "System of Surgery" appeared. The literary position it had then attained as a work unsurpassed "for leading to a correct appreciation of the principles of surgery" is the position it still holds. In this edition every chapter has been thoroughly revised, many portions have been entirely rewritten, and a large amount of new matter has been introduced, in order to place the work fully abreast of the existing state of our knowledge.

The extended review of the fifth edition, which appeared in Vol. LVII. of this Journal, renders it unnecessary for us to enter into the present edition in detail; suffice it to allude to some of the chief alterations and additions which abound in these volumes.

Chapter XIII. is devoted to an elaborate exposition of the principles of general diagnosis, and is a new feature in the book.

It deals with the examination of the patient, the examination of

the different organs, mensuration, the attitude of the patient, the external characters, thermometry, instrumental explorations, and the examination of the discharges. We find this chapter replete with suggestions of the greatest importance to the practitioner, but which are too often overlooked.

In Sect. XII., Chap. XIV., Prof. Gross shortly explains what is meant by the antiseptic method of treatment, a method in which he does not believe. His ground for objection is certainly curious, and is one which we believe few will accept as a reliable premiss. He says—"Although the researches of Pasteur, Virchow, Cheyne, Lister, and other observers have established the existence of myriads of low forms of organisms in our breathing atmosphere, the demonstration of living disease-producing germs is wanting. Hence, physicians, myself included, have been somewhat chary in accepting the germ theory of the decomposition of animal matter."

In Vol. I., Chap. XV. (p. 489), Esmarch's bandage is described, and several useful suggestions are offered. Prof. Gross prefers a rubber band to the rubber cord commonly used:—"Before the use of the compressing band, the constriction excited by the rubber cord was not infrequently followed by sloughing of the edges of the wound, but I have not met with examples of a similar nature since I have resorted to the former contrivance. If the band be too firmly applied it paralyses the vasomotor nerves of the part, so that after its removal, and the ligation of the principal arteries, there is free and prolonged bleeding from the smaller branches, thus leading to the necessity of employing a much larger number of ligatures than when the operation is performed according to the old method. . . . I have always found that the parenchymatous hæmorrhage is readily controlled by retaining a cloth or sponge wrung out of water at a temperature of 110° to 115° F. in the wound, and afterwards loosening the band very slowly."

In amputations through joints, Prof. Gross is an advocate for retaining the cartilages. In Chap. XVIII., Part I., p. 512, he says—"The best plan, as a general rule, is to dispense with the use of the saw and the pliers altogether, experience having shown that the preservation of the articular cartilages greatly favours the adhesive process, and thereby expedites the cure. Sawing off the ends of the bones exposes the parts to suppuration, erysipelas, caries, necrosis, and even to the danger of pyæmia."

Chapters VIII. and IX., Part II., which conclude Vol. I., are devoted to Injuries and Diseases of Bones and Joints respectively

These comprise 364 pages, and give a very detailed and accurate compendium of these pathological conditions. These chapters are specially worthy of careful perusal, being well brought up to date. At page 1002, in discussing the treatment of fractured patella, reference is made to the method of suturing the fragments together with wire under antiseptic precautions. Eighteen cases had been recorded, all of which had recovered with useful limbs, except three in which the joint suppurated and became ankylosed. Lister declares that this method, which he almost invariably adopts himself, should never be employed except by practitioners who are thoroughly conversant with antiseptic surgery.

In Chap. I., Vol. II., under the head of Injuries and Diseases of the Head, we find a remarkable innovation—namely, the introduction of a section on Cranio-Cerebral Topography, which is due to Professor E. C. Seguin, of New York. This, we believe, is the first attempt to introduce matter of this kind into a work on surgery, and the manner in which it has been done, as well as the daily increasing importance of the subject itself, fully justify the author.

In Chapter XVI., Vol. II., Sect. I., we find the subject of Affections of the Kidneys and Ureters discussed. It seems to us that the author has dealt in rather too cursory a manner with the subjects of nephrotomy and nephrectomy—subjects which of late years have been attracting no small amount of surgical attention.

In the chapter on Diseases of the Female Genital Organs we find an excellent section on Ovariectomy in general, to which has been added, in the present edition, a short but clear description of Oöphorectomy, from the pen of Dr. Batty himself, who originated the operation in 1872.

Two valuable chapters—one on Special Excisions of the Bones and Joints, and one on Special Amputations, bring to the close a work which has been too long and too favourably known to surgeons to require any further recommendation from us.

A Text-book of Pathological Anatomy and Pathogenesis. By ERNST ZIEGLER. Translated and Edited for English students by DONALD MACALISTER, M.A., M.B. Part I.—General Pathological Anatomy. London: Macmillan & Co. 1883. 8vo. Pp. 360.

THIS book, on its appearance in Germany, was received with great favour, and within a very short time reached a second edition.

We may anticipate from its many excellences that it will enjoy a corresponding popularity in this country.

Although it is only the first instalment of a large work it is nevertheless complete in itself.

It consists of a short introduction and of seven sections, each of which is divided into chapters.

The first section treats of malformations, and gives, in a short compass, a more complete account of this difficult but interesting subject than is to be found in any other English text-book with which we are acquainted.

In the second section the anomalies in the distribution of the blood and the lymph are described in four chapters, dealing respectively with Hyperæmia and Anæmia, Œdema and Dropsy, Hæmorrhage, including Thrombosis, Embolism and Infarction, and Lymphorrhagia.

The third section is on the retrogressive disturbances of nutrition, and consists of ten chapters, in which are given, concisely but fully, an account of the various forms of necrosis, degeneration and atrophy. We would particularly direct attention to the sections on coagulative necrosis, that condition which occurs when cells die while they are permeated by lymph. Here, by the interaction of the cells, which furnish fibrinoplastin, and the lymph, which yields fibrinogene, fibrin is formed and coagulation results. This form of necrosis, for a knowledge of which we are indebted chiefly to Weigert and Cohnheim, is very common, but has, we believe, met with little attention in this country.

The fourth section treats of the progressive or formative disturbances of nutrition, hypertrophy, hyperplasia, regeneration, and metaplasia.

The fifth section is on inflammation and inflammatory growths. This is one of the most interesting parts of the work, as Ziegler is among the most distinguished investigators of the inflammatory process. He agrees with Samuel and Cohnheim in placing the essence of inflammation in a molecular change in the walls of the blood-vessels. This change may be due to various causes affecting the vessels, either directly through the blood or reaching them from without. The injury to the vessels must be of a certain severity in order to cause inflammation. If it is too slight, no effect follows; if too severe, the part is killed outright.

Among the inflammatory exudations pus is attributed to bacterial infection, the bacteria apparently hindering coagulation.

Diphtheritic inflammation is described as a coagulative necrosis. The tissue of granulations is derived from emigrated leucocytes. Some of these degenerate into pus corpuscles, whose multiple nuclei are a sign, not of division or of progressive change in the cells, but of incapacity for further development. Others pass through successive changes, in which they appear as epithelioid cells, fibroblasts, &c.; and, finally, under favourable circumstances, form the tissue of the cicatrix. These changes are described in accordance with Ziegler's well-known views.

As to the changes in the tissue cells of an inflamed part, "the truth is probably this—that accompanying the inflammatory constructive process there is always some regenerative proliferation in the tissue, and that this is in inverse relation to the severity of the inflammation. Epithelium is a tissue which cannot be reproduced by means of granulations; it can be reproduced only by regenerative proliferation. Other specially differentiated tissues—such as muscles, nerves, bones, vessels—are in the same case. These, if replaced at all, must be replaced by regeneration starting in pre-existing homologous tissues. Cicatricial tissue pure and simple is therefore devoid of all such specialised structures, with the one exception of vessels."—(P. 154).

The last chapter of this section treats of the infective granulomata, by which are understood tubercle, syphilis, leprosy, lupus, glanders, and actinomycosis. Among these, tubercle receives, as its great interest demands, the fullest consideration. It is described anatomically in accordance with our older views, and the changes which Koch's great discovery necessitates in these views are clearly put forward. The author holds that the giant cells of tubercle are not at all peculiar to this growth, but occur, although in lesser number, in all granulations. He hence separates these true granulomatous giant cells from the somewhat similar bodies which are occasionally formed from epithelium, when tubercle occurs in parts provided with cells of this kind.

The description of actinomycosis will probably be new to many of our readers. We think it a pity that a drawing of the actinomyces was not given.

The sixth section deals with tumours. The author holds to the view of Remak that the descendants of the different embryonic layers are never transformed one into the other, either in normal or pathological circumstances. He divided tumours consequently into mesoblastic or connective-tissue tumours, among which he includes

myomata, neuromata, and sarcomata, and into epithelial tumours, including the adenomata and carcinomata.

In the last chapter of this section on the ætiology of tumours, Cohnheim's celebrated hypothesis, in accordance with which all tumours are supposed to have an embryonic origin, is very fully discussed and rejected. Ziegler thinks it is as yet impossible to say precisely what is the efficient cause of the formation of a tumour. The subject of tumours is notoriously a difficult one, and a really good and concise account of these growths has been a desideratum. In the work before us there is to be found what we believe to be the clearest and most comprehensible description of tumours in our language.

The last section, on Parasites, will possibly be considered as the most interesting in the book, for here we have, for the first time in English, a connected and complete account of the schizomycetes, or bacteria, considered from a pathological point of view. Cohn's well-known classification is adopted, but the classifications of other writers are also considered. The biology of the bacteria is fully treated of, so far as it is known. The conditions necessary for their growth, their behaviour inside and outside the body, the possibility of their mutability, and many other kindred subjects, are amply discussed, in accordance with the most recent views. Of the value of this part of the book it would be impossible to speak too highly.

In shorter chapters the hyphomycetes, or moulds, the blastomycetes, or yeasts, and the animal parasites, are described.

The work concludes with an index of authors and of subjects.

The part of Mr. Macalister has not been merely that of a translator; he has added many references to English and French authorities, and has, with Professor Ziegler's approval, in many respects modified the text, so as to make the book more suitable for English students than it was in its original shape. We have no way of knowing exactly how far these alterations extend, and we are often not sure whether we are reading Ziegler or Macalister, but we can say that the result of their joint labours has been to present us with a work which is, in our opinion, incomparably the best book on General Pathology at present existing in the English language.

The type, paper, and the drawings with which the book is profusely illustrated, are everything which the most fastidious could desire.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. BANKS, M.D.

General Secretary—W. THOMSON, M.D.

SUB-SECTION OF STATE MEDICINE.

President—CHARLES A. CAMERON, M.K.Q.C.P.

Secretary—JAMES FERRIER POLLOCK, M.B., Dubl.

Friday, April 12, 1883.

The PRESIDENT in the Chair.

A New Test for Organisms in Water.

DR. POLLOCK read a communication from Dr. R. Angus Smith, F.R.S., of Manchester, disclosing his newly discovered test for the presence of organisms in water. It consists of rendering the water thick by dissolving gelatine in it. If pure the gelatine cylinder remained long unaltered, but if the water be impure, from the presence of organisms, the gelatine round the organisms becomes liquefied and globular, the organisms remaining solid at the bottom of the spheres.

The PRESIDENT exhibited photographs of test-tubes of water which had been thickened by a solution of the purest fish gelatine, and then exposed to the action of light. When the water was pure it remained translucent, but when bad, bubbles were rapidly formed and the bacteria which appeared to be in the water began to act on the gelatine, breaking it up and rendering it soluble. A rapid movement of gas was observable. Where the bubbles or balls appeared to be spherical they were aggregations of bacteria. This change took place quickly, almost in twenty-four hours. But a peculiarity of the test was this, that it was only applicable where infusorial animals were present. For instance, peaty water, in which there were no animalcules or bacteria, would stand without breaking up the gelatine.

DR. POOLE inquired how much gelatine was used?

The PRESIDENT.—Just what would make the water thick.

DR. R. MONTGOMERY.—Is it a test which is only applicable where bacteria are present?

The PRESIDENT.—That is all.

DR. R. MONTGOMERY.—Bacteria are the most deadly of all poisons in water, and in that respect the test seems most valuable and ready for any one to use, although he may not be a scientific chemist.

The PRESIDENT.—In order to change the gelatine, bacteria must be present. Organic matter that is not putrescent or infective will not do it. This is the first public body to which the test has been communicated, and I think Dr. Angus Smith deserves our thanks.

The thanks of the Sub-section were voted to Dr. Angus Smith.

Result of Consanguineous Marriages.

DR. T. FITZPATRICK, as the senior member present, then took the chair.

The PRESIDENT read a paper on Consanguineous Marriages in relation to Deaf-mutism. He described the practices and prejudices in respect of consanguineous marriages amongst ancient and modern nations, civilised, barbarous, and savage. He next reviewed and criticised the memoirs on the subject of the effects produced by the marriage of cousins. On the whole the evidence seemed to show the effects were somewhat injurious. The statistics in reference to mutes, published in the Irish Census reports for 1881 and the previous decennial reports, were closely examined by the author. It appears that in Ireland, in 1881, there were 5,136 mutes, of whom 135 were the children of first cousins. The author endeavoured to ascertain the proportion of the population who were children of first cousins. He ascertained that amongst nearly 8,000 persons the proportion was only 0·57 per cent., or less than one-fourth of the rate amongst deaf mutes. As the statistics were in great part collected amongst Protestants, the author believed that there was not in all Ireland one person in two hundred the offspring of first cousins, as marriage between persons so related was very rare amongst Roman Catholics, who formed three-fourths of the population of Ireland. The general conclusion arrived at was, that consanguineous marriages were a cause of deaf-mutism.

The CHAIRMAN (DR. FITZPATRICK) observed that the paper was the most remarkable he had heard at any public meeting for a long period, making it apparently clear to demonstration that the marriage, particularly of first and second cousins, was productive of deaf-mutism. In his own long experience he found almost every case of deaf-mutism to be the result of the intermarriage of near relatives. To take an example, he found not only was one child a deaf mute and another insane, but

the whole family partook of degeneration of the nervous power. They entered early into marriage, and never prospered in society. Scrofula, deaf-mutism, insanity, and other characteristics exhibiting weakness of brain and muscular power, resulted from those marriages.

DR. EUSTACE thought the question must be considered very much from the animal point of view. The human family was at the head of all other animals; so that the question might be elucidated by what took place with other animals that, according to their anatomy and many respects, were our relatives. It was well known to all persons who tried to breed first-class animals that close in-and-in breeding resulted in very great deterioration of the species, and also that animals when left to themselves did not select their nearest relations for sexual intercourse. Even that much-maligned animal, the female dog, would invariably select not a dog of her own peculiar breed, but one of a different race altogether, both with regard to size and colour. That intermarriages were productive of many evils, as a general result, he held to be a fact. With regard to mental disease he believed the health of the intellect in the human family depended more largely than they were in the habit of considering on the bodily health and physique, although there were exceptional cases in which very poor specimens of humanity were gifted with brilliant intellect. In the treatment of the insane his leading principle was to get up the bodily health, and as it improved the mind improved.

DR. COX mentioned an instance in which two cousins got married. Both were healthy and without any special indication of disease. The result was—that of the offspring, one, a very fine girl, died of phthisis; another developed symptoms of lung disease, but happily escaped consumption; and a third developed spinal disease. Again, in animals other than the human species, disease was apt to occur in those nearly related, while in the vegetable kingdom plants of the same kind which were barren were often fertilised by the pollen of others.

DR. WILLIS instanced a case he saw some years ago, near London, of a sick child whose father and mother were deaf and dumb, and it was through their children, all of whom could speak, he came to a decision about the ailment.

DR. WRIGHT concurred as to the damage ensuing from the marriage of near relatives, and referred to Darwin's experiment on pigeons, and to the difficulty of keeping a pure breed of poultry, as illustrated by the fate of the bantams brought from the palace of Pekin, and by the destruction of another favourite breed of fowl, the white-crested Polish. He did not believe that female animals selected the male. The converse, he thought, was the rule.

DR. EUSTACE said such selection had brought the term of reproach upon bitches, and their offspring were called curs.

The PRESIDENT (DR. CAMERON) replied, pointing out that his statistics were necessarily incomplete and restricted. It would be indispensable to ascertain how many of the whole population were the children of first cousins before drawing a definite conclusion.

Disposal of Sewage in Villages.

DR. W. M. A. WRIGHT, of Dalkey, read a paper containing suggestions for the better disposal of sewage in Irish country villages. It must be admitted, he contended, that in the better class of Irish villages, where each cottage is provided with a privy and ashpit, a serious nuisance is frequently caused by their faulty construction and the filthy manner in which they are kept, the receptacle of the privy being generally too large, some too deep below the level of the ground, and communicating with the ashpit, which is also too large, deeply sunk, and uncovered by a roof. Both privy and ashpit being undrained, their contents mix and form a foetid semi-fluid mass of liquid excreta, vegetable refuse, and fine ashes, which is frequently augmented by the surface drainage from the neighbouring pigstye. Such a state of things as this is dangerous to health, both directly from its gaseous emanations, and also indirectly through the soakage into the neighbouring soil; and it is for such cases that the improvement is suggested. The poorer class of Irish village, which consists for the most part of irregular, detached mud cabins, being quite destitute of any kind of privy or ashpit accommodation, will not be considered, as in their case the nuisance just described does not exist. It must be remembered that any proposed scheme, to be practical, must be cheap both in construction and in working, and simple, as both the rural Boards of Guardians, who are the sanitary authorities, and the owners of the cottages, would be certain to reject any costly plan. The expense of construction would prevent the adoption of either the water-carriage, the dry earth, the simple pneumatic, or Liernur's system; and the trouble and expense of the necessary scavenging put the pail systems (both the Gonn and Rochdale) out of the question. In fact, the method most likely to be successful in practice is one to improve away the more dangerous properties of the privy and ashpit. The best way to effect this is—first to roof over the ashpit, and have no communication between it and the rafters of the privy; next to construct the privy with a small receptacle, the floor of which should be carefully cemented and sloped towards the back wall, where an open grating is fixed to permit the escape of the urine and leave the fæces dry. The urine should then pass into a sewer-pipe which is common to as many cottages as possible, probably to all on one side of the street, and which also receives the house-slops and the liquid manure from the pigstyes and stables, but no rain water, and empties into a cemented and well-ventilated cesspool, situated in a grass field as far as practicable from the village. When

the cesspool becomes full it can be readily emptied by means of a pump with a long hose-pipe attached to its nozzle, and its contents distributed by irrigation over the field in which it is sunk. As it is full of highly-concentrated liquid manure, which forms a most valuable application as a fertilising agent, the results to the pasture will be most beneficial, while, owing to the well-known properties of growing vegetation, the sewage will become rapidly deodorised and rendered innocuous. The solid excreta which remained in the privy can, when the ashpit is being cleaned, be mixed with the dry ashes, and so removed without causing any nuisance dangerous to health.

DR. WILLIS considered the author's proposal impracticable in certain parts of Ireland. He related an instance of a gentleman getting privies built for his tenantry in the County Limerick; but they pulled down the privies, except one man who got the name of "Jack the Gentleman," and he at length had to make a compromise with local opinion—he let the privy remain up, but did not use it. Farmers even with 200 or 300 acres had not a privy, but simply a causeway extending to a deep ditch.

DR. POLLOCK said Dr. Wright had, no doubt, brought forward a practical paper, but his sanitary measures were in great part retrograde, especially in suggesting the introduction of the old cesspool again. Earth was a great deodoriser, but of course its effect was limited to deodorising a certain quantity of matter. As an illustration, he knew of a cesspool at the end of a long garden which had so saturated the clay that a spadeful could not be turned up without producing the most abominable stench. A patient of his had nearly lost her life from the same cause.

DR. R. MONTGOMERY mentioned having seen in the neighbourhood of St. Patrick's Cathedral that day a large heap of manure close to a room six or eight feet square, in which there was a child, aged ten, sick with fever. The room was in a dreadful state of filth. A woman lived there with seven children, along with her husband who had fourteen shillings a week!

REV. H. SEDDALL testified to the deplorable want of sanitary precautions among the peasantry all over Ireland. He had often pointed out the risks they ran of getting fever.

DR. H. V. DILLON indicated the danger of cesspools polluting wells from which the country people obtained their supply of water to drink.

DR. COX did not see any reason except decency why human excrement should be more deleterious than that of other animals, which, when exposed to the atmosphere for a time, became deodorised and practically inoffensive. Hence it was that, having regard to the habits of the peasantry, who went some distance from their dwellings, the excrement was not productive of the danger that might be supposed, but from exposure it became reconverted into its mother-earth. Indeed he could conceive it to be less harmful than where the excrement was conveyed

in sewers and discharged into the tide, and then washed back again. At same time he did not want to defend the habits of the peasantry. He suggested the innocuous disposal of excrement by incineration.

DR. DOYLE concurred as to the effect of atmospheric exposure in rendering excrement harmless.

The PRESIDENT would have the whole material collected in one receptacle, like an ordinary liquid manure tank, which was provided in every well-regulated farm-yard in Scotland and England, and also in parts of Ireland. He believed the burning of excrement would be the course adopted in future, as was done in Glasgow, Manchester, Bolton, and other towns at present. When incinerated it was reduced to an ash, which was used as a building material. The excrement was collected in pails from the house, the man throwing a pinch of carbolic acid into each pail, and thus preventing any noxious odour. Every town required some system that its local condition rendered more desirable than another. In Dublin he was doing all he could, inducing the people to give up filthy privies. There were 2,000 water-closets substituted for privies, while there were 16,500 water-closets as against 11,000 privies, and he hoped there would be no privies worth speaking of in the course of five or six years.

DR. WRIGHT replied.—It was amusing that the first speaker accused him of proposing a scheme too advanced for country villages, while Dr. Pollock told him he was retrogressing. His answer to the first speaker, and also to Dr. Cox, was that he did not propose to deal with isolated dwellings at all. Instead of the defective system at present existing, he would employ a pump with a hose 50 or 60 feet long, and irrigate a field with the sewage, scattering it over a large area, to be absorbed by the grass. He would have the cesspool in such a position that the sewage would flow away from the water supply, and not towards it. The solid excrement would be pretty well dried by the current of air circulating through the privy, and it could be mixed with ashes when thrown out.

The sub-section adjourned.

MEDICAL SECTION.

President—WILLIAM MOORE, M.D., President K.Q.C.P.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, April 20, 1883.

The PRESIDENT in the Chair.

Specimen.

DR. M'SWINEY.—Thoracic aneurism.

Communications.—1. *The Therapeutic Value of Nerve-stretching in Tabes Dorsalis.*

MR. STOKES read a paper on the therapeutic value of nerve-stretching in tabes dorsalis. He commenced by pointing out that the evidence afforded by the cases of tabes dorsalis treated by nerve-stretching indicated the fact that relief from some of the most distressing symptoms of that disease may, if the operation be performed sufficiently early, be anticipated. He considered that the absence of a physiological explanation as to how the operation acts is no reason for its rejection, and gave instances of other operative procedure of which the *modus operandi* is as yet unexplained. The particulars of two well-marked examples of the disease treated by him—in one of which he stretched the sciatic nerve on one side, and in the other on both sides—were then given. Although the operations were not followed by any signal improvement in motor power, the results in other respects, as regards relief from lightning pains, vesical irritability, and return of sensibility in certain regions of anæsthesia, were satisfactory and encouraging. The views of various writers on the effects of stretching on the nerves were discussed, and those of Ceccherelli shown to be at variance with the results obtained in the author's cases, and also with the experience of Dr. Brown-Séquard. Then Mr. Stokes discussed the importance of estimating accurately the amount of force that should be used, and was of opinion that a very moderate amount is sufficient to obtain the desired therapeutic results. He also stated his belief that many of the recorded failures of the operation were to be attributed to the employment by the surgeon of an undue amount of force. He advocated the use of an electric cord and dynamometer in nerve-stretching, and believed that in the case of the larger nerves a force of about 10 lbs. would be found sufficient. Although a satisfactory physiological explanation as to how nerve-stretching produces the results observed was still to be obtained, we were not wholly in the dark. He quoted Dr. Brown-Séquard and Dr. Charlton Bastian to show that after the operation a certain amount of vaso-

paralysis is produced, resulting in vascularity and increased temperature of the part, and that the improvement which occasionally follows the operation is probably connected with these phenomena.

THE PRESIDENT did not see why they should pass over nerve-stretching merely because they did not understand the *rationale* of the treatment. He thought the procedure would apply to nervous functional affections, such as sciatica.

DR. DUFFEY said there was no doubt the operation gave a certain amount of relief to some of the distressing symptoms of the disease. Ceccherelli, in giving an analysis of 100 cases of nerve-stretching for various conditions, had described certain pathological changes when the operation had been followed by extravasations or regenerative changes affecting the vessels of the nerves which he presumed tended to diminish the sense of conductivity of the nerve. The amount of traction was so great as to affect the cord directly. Some observers believed in certain changes having taken place in the cord itself. In favour of this view, nerve-stretching on one side of the body might relieve symptoms referable to both sides.

DR. C. J. NIXON considered that the operation of nerve-stretching in this disease should be used in desperate cases after all other means of giving relief had failed. He thought it a very doubtful point what amount of traction could safely be made on the cord.

DR. FINNY asked what was the right time at which the operation should be performed? He referred to the frontal nerve having been stretched in cases of facial neuralgia.

DR. H. KENNEDY thought that slightly pinching the nerve, and thus conveying irritation that could not injure its substance might have a beneficial effect.

DR. CORLEY considered the operation a most serious one to perform, and one to be approached with the utmost carefulness. In some cases of stretching the sciatic nerve the cord answering mechanically to the stretch would be moved as far as the cervical vertebræ. In the case of sciatica in which he operated the nerve was affected with neuritis. The next day severe symptoms arose, indicating that although the force used was not great it had effected serious changes in the cord. These symptoms disappeared after forty-eight hours. Two months had now elapsed since the operation, with complete absence of sciatic pain.

MR. STOKES, in reply, said that in Ceccherelli's cases undue violence must have been used. He could not lay down any rule as to the time at which the operation should be performed, but probably the earlier the better.

2. *Thoracic Aneurism.*

DR. M'SWINEY read the notes of a fatal case of thoracic aneurism, occurring in a sailor who had worked at his employment up to within

one month of his death. The aneurism was not diagnosed during life, as there were no signs or symptoms present specially characteristic of the disease. The man was supposed to have got cold from exposure during hard weather. He had cough, bronchial râles and pain in the region of the heart. Physical examination threw no light on the nature of the case. The patient expectorated nine or ten ounces of bright red blood, and died in a few hours afterwards. *Post mortem* twenty hours after death:—The aneurism springs from the posterior and outer aspect of the descending portion of the arch of the aorta, and projects into the upper and inner part of the left division of the thorax, a portion extending across the vertebral column, eroding the bodies of the third, fourth, fifth, and the upper part of the sixth dorsal vertebræ, and lying in the upper and inner portion of the right division of the thorax. The third and fourth ribs on the left side have been eroded, and the tumour has passed backwards between them a short distance. The entrance into the aneurism is circular and about as large as a sixpence, and a quarter of an inch below it a little pouch is formed in the site of the origins of the first pair of intercostal arteries. This is evidently the beginning of a second aneurism, the aorta being in this portion very much diseased. The arch and thoracic portion of the aorta are atheromatous, as are all the valves of the heart, in varying degrees. The bronchi and œsophagus do not show any sign of pressure. The thoracic duct could not be found, but large lymphatic vessels, connected with glands lying at the sides of the vertebræ, are to be seen. The sac is filled with laminated fibrin, and was covered with a quantity of tough matted tissue. The aneurism was therefore diffused. The recurrent laryngeal nerve was not to be found in the specimen. A few fibrous strings are to be seen at the upper portion of the pericardium, but no signs of pericarditis on any other portion of the pericardium. The lower lobe of the left lung, at its superior posterior part has become adherent to the aneurism, which has here burst into it. There is a cavity in the central portion of the external part of the lobe, which was covered only by pleura. The costal pleura is thickened on both sides, and on that portion nearest the tumour the deposited lymph has undergone fatty degeneration.

The PRESIDENT could not agree that symptoms were quite absent.

DR. FINNY drew attention to the absence of hypertrophy of the left ventricle, notwithstanding the size of the aneurism, which confirmed Stokes's observation on this point.

DR. C. J. NIXON related a similar case of fatal aneurism in which the only symptoms present during life were those of severe bronchitis.

DR. HENRY KENNEDY having made some remarks on the case,

The Section adjourned.

PATHOLOGICAL SECTION.

President—J. M. PURSER, M.D.

Sectional Secretary—E. H. BENNETT, M.D.

Friday, May 4, 1883.

The PRESIDENT in the Chair.

Living Specimens.

The following specimens were exhibited:—DR. J. S. M'ARDLE—Deformity of the upper extremity and arrest of development following injury of the median nerve. Twenty years ago the patient, who is now in his twenty-sixth year, sustained a fracture of the humerus and dislocation of the elbow. Paralysis followed, and, after the reduction of the dislocation and repair of the fracture, contraction of the flexors gradually set in. At present the temperature of the hand is 2° below that of the sound side. The forearm is two inches shorter, and the wrist one and a half inches less in circumference. Cyanosis is always present on the affected side. A neuroma is present in the antecubital fossa, pressure on which causes numbness in the area of the median nerve. The nails and skin are all ill-nourished, and a cicatrix on the flexor aspect marks the point at which bullæ have appeared since the injury. MR. BENSON—Nyctalopic conjunctivitis. MR. COPPINGER—A patient suffering from hydatid disease of the femur.

Specimens Exhibited by Card.

The following specimens were exhibited by card:—MR. ABRAHAM—Ulceration of the intestines, associated with malignant disease of the cæcum, with microscopic mountings. MR. COPPINGER—Portions of bone affected by hydatids, removed from the femur of the patient exhibited. MR. STOKES—Thrombus of the pulmonary artery. MR. ABRAHAM—A single kidney from the body of a man; the left kidney, its vessels and ureter were congenitally absent. DR. L. MATURIN—(1) Congenital deformity of the forearm and hand; (2) aneurism of the ascending aorta. MR. CORLEY—Impacted alimentary bolus. P. S., aged forty-nine, married, residing at 63 Church-street, owning a lodging-house, was brought to the Richmond Hospital, 14th April last, at 11 15 p.m. On admission he was quite dead. The following facts were elicited from his wife at the coroner's inquest on the 16th:—Deceased came home on the evening of the 14th considerably under the influence of drink, and sat down along with several others to eat his supper. After having eaten quietly for some minutes, he suddenly attracted the attention of one of the others by giving a violent smothered cough. On looking

round he said he saw him all black in the face and staring at him. He ran over and hit him on the back, and succeeded in getting a small piece of the meat (corn beef) out of his mouth, but without any effect on him. He was then brought to hospital. The piece of meat did not enter the larynx, but was firmly impacted into the pharynx—in this way completely occluding the opening of the larynx.

Papers—1. *Congenital Malformation of the Thorax*; 2. *Influence of Fracture on the Growth of Bone*; 3. *Hydatid Disease of the Femur*; 4. *Thrombosis of the Pulmonary Artery*.

1. DR. E. H. BENNETT read a paper describing the characteristics of congenital malformation of the thorax, in which the anterior extremity of a single rib failed to reach its cartilage, and there existed in consequence a depression of the thoracic wall on one side, while the cartilages attached to the corresponding side were hypertrophic, and projected as tumours in front of the level of the sternum. Having referred to the description of this malformation given by Otto and Rokitanski, in which no mention is made of excessive development on the side opposite to the defect, Dr. Bennett showed a preparation which presented the characters mentioned in a most marked degree. He pointed out the importance of a knowledge of this malformation in relation to diagnosis of lesions of the costal cartilages, illustrating the point by the facts of the case from which he had obtained the specimen, and from two other clinical observations. In all three cases injuries had occurred which suggested that the thorax had been crushed, and the diagnosis had been erroneous in one—that from which the specimen had been taken.

2. The SECRETARY (DR. BENNETT) read, for MR. J. DAVIDSON, a paper on the influence of fracture on the growth of bone, in which the author recorded the results of his observations on the fracture of the long bones of the lower animals, chiefly fowl, in which the injury occurred during the active growth of bone. Comparison of the injured bones with their fellows showed that there existed a marked increase of size in all dimensions, the bones being heavier and longer on the fractured side.

DRS. FRAZER, STOKES, CORLEY, M'SWINEY, BENNETT, and ABRAHAM, discussed the foregoing paper, and expressed their sense of the exactness and care displayed by the author in his investigation.

3. MR. COPPINGER read a paper on hydatid disease of the femur, the patient and parts removed, which established the diagnosis, having been exhibited to the meeting already by card. He alluded to the infrequency of the occurrence of hydatid tumours in the human subject in Ireland, notwithstanding the known prevalence of the echinococcus disease in sheep, mentioning that hydatid tumours, even in countries where the

affection is comparatively common, seemed scarcely to invade the bones, and that no instance of the disease in the bones had up to the present been recorded in this country. The patient [exhibited, and from whom the cysts and portions of bone had been removed] had been under observation for three years, having been admitted to the Mater Misericordiæ Hospital on receipt of a spontaneous fracture of the upper third of the femur, due apparently to its invasion by the parasite. The disease was not diagnosed until Mr. Coppinger had made an attempt to excise the patient's hip-joint, and discovered a large cavity in the dilated upper part of the femur, containing hydatid cysts, and loose pieces of bone studded over with small echinococcus vesicles. These [some of which were shown as microscopical specimens] exhibited the characteristic features of echinococcus cyst, scolices, &c. The complete excision was abandoned, but the great trochanter was removed with a saw, and the cavity finally laid open, and syringed out with chloride of lime solution. It was then ascertained that the shaft of the femur was firmly connected with its neck by means of the thin walls of the bony tumour, and it was hoped that, the disease having been apparently removed, the space would fill by granulation bone from below. It had since become much smaller; but the patient's condition was so unsatisfactory even now, after treatment extending over nearly two years, that another operation would be performed for the purpose, if possible, of eradicating the disease. The limb was three inches shorter than its fellow. The man was obliged to have a crutch, being unable to rest his weight upon the limb; and the wound, which was still open, led through a narrow slit in the bone into a cavity in its centre, extending upwards into the femoral neck, as well as downwards into the shaft of the femur. Although this cavity was daily washed out with carbolic and boroglyceride solution, and although all disease was apparently removed, collapsed cysts and shreds of membrane still escaped from it occasionally, proving that the peculiar disease caused by the presence of small exogenous cysts in the cancelli of the bone had not yet been eradicated.

4. MR. THORNLEY STOKER read notes of a case of thrombosis of the pulmonary artery occurring in a boy subsequently to the removal of the thyroid body, and proving fatal. He exhibited the specimen.

DR. BENNETT expressed his doubt as to the character of the thrombus, regarding it as a *post mortem* production.

A discussion followed, in which DRS. THOMSON, CORLEY, KIDD, and ABRAHAM took part; and MR. STOKER replied.

DR. R. A. HAYES exhibited on a screen with the lantern photographs of the microscopic appearances of the normal and diseased tissues, and explained the details of the process.

The Section adjourned.

SURGICAL SECTION.

President—JOHN KELLOCK BARTON, M.D., President R.C.S.I.

Sectional Secretary—WILLIAM STOKES, F.R.C.S.I.

Friday, April 13, 1883.

The PRESIDENT in the Chair.

Living Specimens.

MR. WHEELER—(1) Amputation at shoulder-joint; (2) amputation of foot (Syme's); (3) excision of elbow. MR. STOKES—Excision of the knee-joint. MR. THOMSON—Parts removed in case of refracture of a patella.

Specimens Exhibited by Card.

MR. STOKES—Photographs illustrative of results obtained after excision of the knee-joint—(1) Excision for pulpy thickening of synovial membrane; (2) excision for faulty ankylosis; (3) excision for ulceration of cartilages and pulpy thickening of synovial membrane; (4) excision for caries and extensive disease of soft structures; (5) excision for synovial thickening; (6) excision for caries and pulpy thickening; (7) excision for pulpy thickening and commencing caries. MR. SWAN—Excision of knee-joint.

Communications.—1. Removal of the Thyroid Gland.

MR. THORNLEY STOKER read a paper on removal of the thyroid gland in cases of bronchocele. He detailed the case of a boy on whom he had himself operated, the disease being the most extensive of which he could find any operative record. The tumour extended nearly from ear to ear, and hung down nearly as low as the navel. He removed two-thirds of the mass, comprising the right lobe and isthmus, in March, 1882, and the remainder on the left side a year later. Complete recovery followed the first operation, but the patient died five days subsequent to the second from pulmonary thrombosis. The patient was incompletely cretinish, but developed greatly after the first operation. Mr. Stoker showed that while ten or twelve years ago the ablation of the thyroid gland for disease had been practically abandoned, during the last decade a revulsion of surgical feeling on the subject had occurred, and that now it should be held justifiable, as the result of late experience, to perform the operation, the patient so desiring, not only in cases where the disease threatened life, but where discomfort or disfigurement existed and minor treatment had failed. He emphasised his argument by quoting a series of cases from the practice of various surgeons, commencing in 1871 with Dr. William Warren Greene, of Boston, whom he regarded as the

pioneer of the most modern opinion on the subject. The freedom with which the operation had of late been undertaken was, he thought, in part due to the results of Listerism, and in part to the greater boldness which increased knowledge and improved appliances have generated in the surgeons of our day.

DR. R. M'DONNELL said he was present on both occasions. The first operation might be regarded as quite successful, and taught the lesson that in cases of the kind the operation was justifiable. The second had a fatal issue from a cause not necessarily connected with the operation.

MR. CORLEY stated that in his hospital practice some years ago a similar case arose where the pressure of a large thyroid gland became so great as to render operative interference necessary. It was shortly after P. H. Watson published his paper, and having written to him for details he got a copy of it. He was forcibly struck with the solemnity of the undertaking to remove the thyroid gland as an operation in which the surgeon must be prepared in some cases to see the patient die on the table. Hence he did not think Mr. Stoker had dwelt sufficiently strongly on the magnitude of the operation.

DR. H. KENNEDY drew attention to the treatment of thyroid tumours by the seton, and mentioned a case in which at the end of some months the disease was entirely cured. Such a measure as that would be more justifiable in the first instance than the terrific operation described by Mr. Stoker.

MR. THOMSON was sorry to differ from Dr. Kennedy in his suggestion as to the surgical practice in the case Mr. Stoker had detailed. Whatever use the seton might be in some cases of small thyroid tumours, it would have been useless in Mr. Stoker's case, in which the vessels were of enormous size.

SURGEON-MAJOR HAMILTON remarked that 10 or 15 per cent. of the population in the Himalayan valleys suffered from bronchocele. Sometimes twenty and thirty coolies might be seen climbing mountains 2,000 to 3,000 feet high, carrying enormous loads 50 lbs. or 60 lbs. weight, and each wearing a tumour. It seemed extraordinary that the pressure on the larynx did not interfere with their breathing. By rubbing in biniodide of mercury ointment with a spatula as they lay on their backs in the sun they always obtained relief. The great benefit seemed to be derived from doing it in the sun. He had seen many cases so treated, and had not known any of the men to die from it. When at Simla an epidemic of bronchocele broke out—no less than 60 cases—and the same treatment was adopted. In the Himalayan valleys syphilis was supposed to be the cause, and the people lived on inferior food in over-crowded, dirty houses, badly ventilated.

DR. FOX instanced the case of a woman, aged twenty-two, who had a very rapidly-growing thyroid tumour, which caused her inconvenience both in breathing and swallowing. It became urgently necessary to do

something, and he applied a blister on the back of the neck with the best result. A seton was subsequently inserted, and the gland in a short time assumed its normal size.

SURGEON-MAJOR HAMILTON observed that it was the smaller tumours which were very often radically cured. Europeans were treated for enlargement of the glands, the same as the natives. The only danger was from sunstroke, but this was avoided by placing the upper portion of the body in the shade.

MR. WILLIAM STOKER mentioned that similar treatment was the rule in Switzerland.

MR. WHEELER said that no one would think of extirpating the thyroid gland due to anæmia, or the thyroid enlargement of menstruation, or what might be termed the cystic bronchocele; but he was of opinion that bronchoceles of large size and when very chronic, if causing dyspnœa, dysphagia, and pressure on the jugular vein and vertigo, ought certainly to be removed. He did not agree with Mr. Hamilton in thinking that the rays of the sun were essential to act on the biniodide ointment. Such practice was common in India, but the heat of the fire would answer very well.

MR. THORNLEY STOKER replied.

2. *Orthopædic Cases.*

MR. SWAN read a paper on the primary consideration of orthopædic cases. He explained certain allusions to affections not strictly to be termed orthopædic by stating that they very frequently were seen by surgeons practising that branch of surgery. He detailed some cases of caries in the tarsus of children, showing the differences of opinion that existed respecting the treatment to be adopted in this affection, and the modified conclusions respecting excision of diseased structures arrived at by Sédillot, Erichsen, T. Holmes, Gross, and others. From a prolonged observation of a limited number of examples made by himself, and from the results obtained from the records of Dr. H. Culbertson and Dr. Virgil Gibney, of New York, he arrived at the following conclusions:—(1) That the advantages of excision or evident in tarsal caries do not appear to be so obvious as to warrant their frequent application; (2) that as there is no evidence of amyloid degeneration of viscera in long-continued suppuration of the tarsal joints, that conservatism in its widest signification may be specially applied to disease of these structures; (3) that an ankylosis of the tarsal articulations, a result of the generation of plastic material during the course of the disease, will occur, but that this process, though diminishing the mobility of the foot, will leave it fairly useful. In referring to angular curvature of the spine the impossibility of predicting the amount of deformity was maintained. The supervention of paraplegia, on the other hand, might

be confidently anticipated to occur only in caries of the cervical or upper dorsal vertebræ. So far as the paralysis was concerned the prognosis might be stated to be usually favourable. The probability of the development of abscess was shown to be chiefly the result of motion, and not necessarily the sequence of extensive gibbosity or even extensive implication of tissue. Scoliosis was stated to be, except in an early stage, an incurable affection, and one in which prevention was better than remedy. Mr. Swan showed an apparatus which he stated he had used with success in early curvatures. In equino-varus a section of all resisting structures was insisted on, and relapses were said to be often due to a neglect of this rule. Mere congenital distortions of the feet were divided into—(1) those the result of nervous lesions; (2) those depending on ligamentous relaxations; (3) neuronervetic affections; and (4) those of traumatic origin. In the treatment of deformities of the lower limbs, depending on essential paralysis, as usually adopted, whether by counter-irritation, localised galvanism of Duchenne, massage, or the Swedish movement cure, the writer did not put much faith, but held a strong opinion on the utility of the direction of volition to the limb, whilst by proper means maintaining symmetry, holding that the development of the use of the unaffected muscles even remotely attached to the member established a compensating power, and believing that in many cases some of the fibrillæ of muscles, the bulk of which were paralysed, retained contractile power.

MR. WHEELER was of opinion that Mr. Swan was not sufficiently explicit in his paper with reference to the disease of bones of the foot and the excision of bones, &c. A tolerably accurate diagnosis of the extent of the disease could be formed by observing where the disease commenced. There were four distinct synovial sacs in the foot. Hence it would be easily understood that the extent of the disease would be greatly influenced by its starting-point—for instance, it would be plainly much more limited if starting in the os calcis than in the cuneiform bones. Complete excision of the os calcis was not a very common operation. The results in two cases he had were most satisfactory. A third, however, was not quite so successful. He deprecated the use of the gouge as dangerous and unscientific practice, especially in disease of the ankle-joint. It was not always easy to say when the entire disease was removed. He agreed with Mr. Swan's statement that in talipes equino-varus the anterior tibial muscle, and if necessary the tibialis posticus, should be cut before the tendo-Achillis.

The PRESIDENT remarked that the partial removal of carious bone was exceedingly unsatisfactory. Although Mr. Wheeler had condemned gouging, his experience of it had been attended with marked success.

MR. SWAN replied.

The Section adjourned.

CLINICAL LECTURES ON DISEASES OF THE LOWER BOWEL.

By EDWARD HAMILTON, F.R.C.S.I.; Surgeon to Steevens' Hospital.

LECTURE V.

THE surgery of hæmorrhage from the rectum is so intimately connected with the subject of our last lecture that we may with advantage consider it now. Blood may be discharged by stool under very different conditions. Thus it may be derived from the rectum itself, from some part of the gastro-intestinal mucous membrane above, or it may have its source from organs unconnected with the alimentary canal, properly so-called, being swallowed in epistaxis or hæmoptysis. You should also bear in mind that evacuations may be stained by catamenial discharge. Blood in the stools of children is of rare occurrence, and should always excite our apprehension, and lead us to search carefully for the cause of it. It most frequently indicates polypus, but it may herald the more formidable affection, intussusception. When blood issues from the upper part of the canal it is usually expelled of a dark, almost black, colour—hence the appropriate appellation, “Melæna.” The red corpuscles are acted upon by the intestinal secretions. It is well to remember that a similar appearance may be given to the evacuations by the administration of certain metals, such as iron or bismuth, and may cause our patients considerable alarm. The two conditions may be distinguished by simply diluting the mass with water: the blood will assume its characteristic colour, the other may become of a paler hue, but will not assume the florid tint of blood. Hæmorrhage under these conditions must be regarded as a symptom rather than an essential disease. From the rectum itself the blood is usually of a bright colour, unless it has been retained for some time in the bowel. It is occasionally profuse in quantity after injuries or operations, and is peculiar as to the mode of its occurrence. The patient experiences a sense of weight and fulness about the bowel, with a desire to go to stool. A soft semi-liquid evacuation is discharged, consisting of fluid and coagulated blood, which may escape his observation, but the patient feels weak and faint, and returns to bed. This may be repeated until his pallor and general collapsed condition attract the notice of his attendants. This contingency is much less frequent since we commenced to stretch the sphincter as a preliminary to operations on the rectum. In dealing with it we must rely upon and adopt the general principles of surgery as

applied to hæmorrhage, which we need not dwell upon here. The peculiarity of the anatomical locality requires some special device, such as the sponge tampon. A cup-shaped sponge with a strong cord attached should be passed dry into the bowel above the sphincters; a second piece should be passed into the anus. Over this the ends of the cord should be secured. When you wish to remove it the cord should be untied, the external sponge removed, and a quantity of warm oil injected into the inner one. It has been suggested that the inner sponge should be covered with fine gauze or muslin, in order to prevent new vessels or granulations from extending into its meshes; but it should not be permitted to remain sufficiently long to admit of such growth being any real impediment to its removal. If we have not the sponge, pieces of lint or linen tied consecutively to a string, like the tails of a kite, may be introduced one after another; or a hollow cone of muslin may be passed up with the finger or a bougie and stuffed with charpie or ice. These applications may be soaked in any styptic solution which may be at hand. If turpentine is employed it should be used sparingly, as it may cause intense irritation of the mucous membrane, which might assume an alarming diffuse character.

After operations the only safe plan is to adopt the golden rule of surgery—search for and tie the bleeding vessel.

It is almost unnecessary to remind you that the term “prolapsus ani,” commonly used to designate protrusion of the bowel at the anus, is not critically correct. The anus is fixed, and the protrusion occurs through it. “Prolapsus recti” is also objectionable, because the phrase will not include all the varieties of this important malposition. “Prolapsus per anum” is more in accordance with true pathology. Two distinct modifications of this condition must be clearly kept in our minds; they have received several designations, as “partial and complete,” “prolapse and procidentia,” “prolapse of mucous membrane, and invagination.” We will first consider the milder form of this disease. It is most frequently met with in children. Mothers and nurses usually tell you that the “child’s body comes down.” Two very opposite causes may produce this affection, which, by the way, I may mention is not uncommon in the horse. It may be caused by excessive expulsive effort or by weakness and want of sustaining power in the sphincter, and not infrequently both causes cooperate to induce the prolapse. The disease is most frequently met with in the weak, ill-nourished children of the poor, between two and four years of age, and is in itself evidence of constitutional debility and relaxed fibre, associated with chronic irritation of the entire mucous membrane. You seldom see an operation for stone in the child in which the prolapse of the bowel does not form a troublesome complication. We can easily understand how this is caused by the straining and expulsive efforts. In the same way polypus may cause it,

drastic purgatives, ascarides, nurses allowing children to sit too long a time at stool, constipation, while the anatomical conditions of the rectum in the earlier periods of life tend to promote the disease. The abdomen and pelvis are in the same line, the sacrum is straight, the coccyx imperfectly ossified, the bowel is less curved, its mobility greater, and the lower outlet of the pelvis less perfectly closed, owing to the immature condition of the reproductive organs. In the adult we have such causes as stricture, prostatic disease, and other affections of the genito-urinary apparatus, hæmorrhoids, parturition, over-dilatation, as in manual exploration, the removal of foreign bodies, or unduly extended incisions for fistula.

The simple protrusion of the mucous membrane—"partial prolapse"—is an annular swelling, with wrinkles distinctly radiating from the centre to the circumference, of a pinkish red colour. It sometimes appears as two lateral flaps. It is usually coated with mucus, stained with blood or fæcal discoloration. When the protrusion has become chronic the membrane becomes thickened and its surface dulled by exposure and friction, becoming more and more difficult of permanent reduction; and the disease will ultimately run into the more severe form.

"Complete" prolapse requires your most careful attention, as the subject has not received that emphasis in your class-books and systematic works on surgery which its importance deserves.

Complete prolapse should be divided into three distinct varieties or degrees:—

1. That in which *no groove* or channel surrounds the protrusion, the muco-cutaneous tissue descending directly on to the prolapse.

2. Where the prolapse is surrounded by a shallow groove or sulcus. When the finger is passed into this for some distance its further progress is arrested by the reflexion of the mucous membrane from the wall of the rectum to the uppermost point of the prolapse.

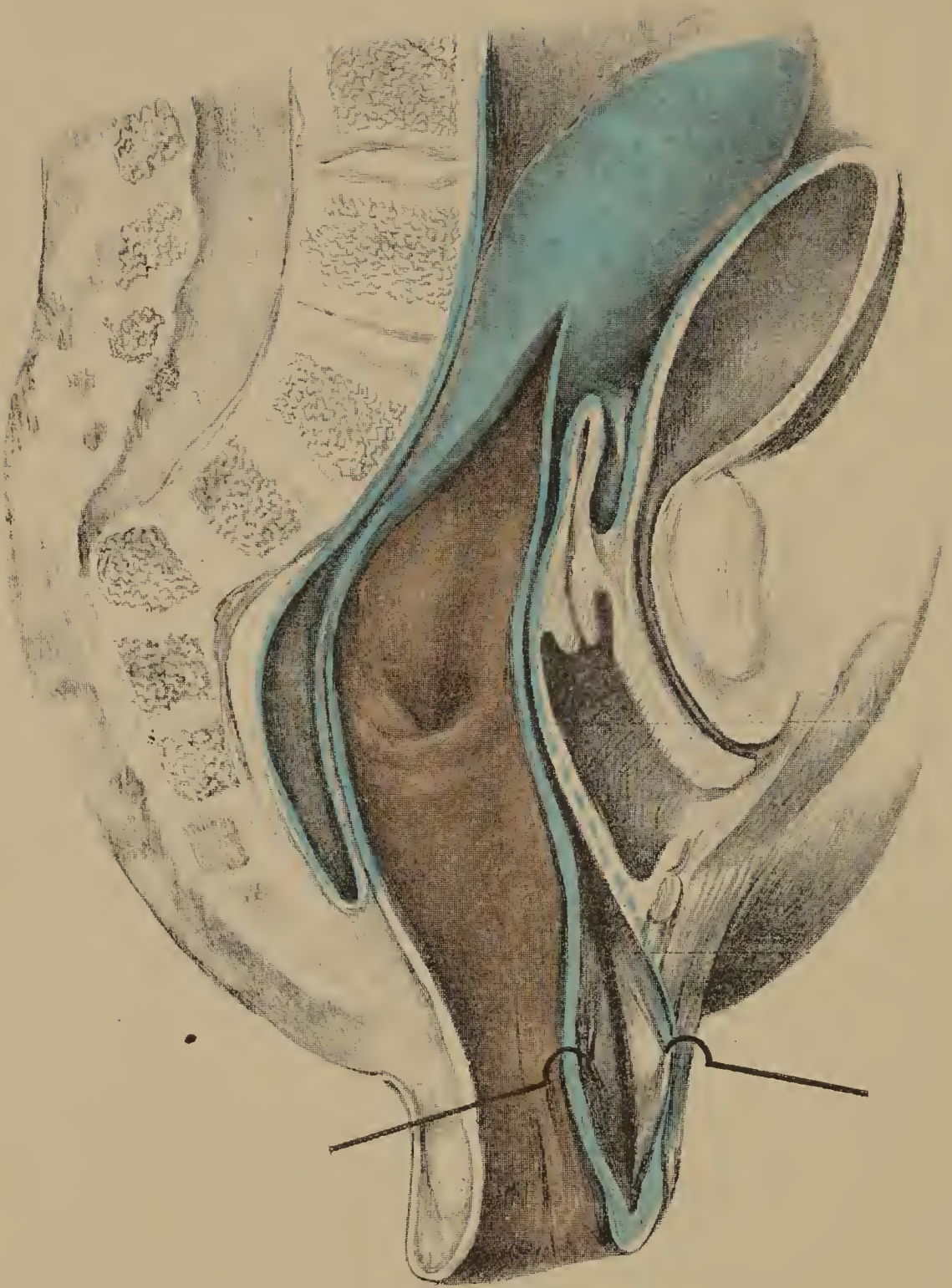
3. Where there is the sulcus, but the finger, no matter how far it may be pushed along the side of the protrusion, meets with no such reflexion of the mucous membrane. These latter cases, we shall see, are identical with *intussusception* or *invagination*, the intestine having become—to use a phrase now rendered terribly familiar by railway accidents—*telescoped*.

Let me, gentlemen, impress on you the all-important clinical fact that each of these three varieties, the first as well as the third, are *complete*—that is to say, they are each composed of all the constituent structures of the intestinal wall—peritoneum, subserous, muscular, submucous, and mucous layers. Great misconception exists on this point. It is constantly supposed—nay, even taught—that the first degree contains nothing but mucous membrane, but you must not be led away from the cardinal clinical fact that you may have complete prolapse of the bowel,

consisting of all its coats, *without the sulcus*, which is so apt to be considered as pathognomonic of its existence.

The first variety is usually caused by long continuance of partial prolapse. It is, of course, larger in size, more fleshy to the feel, and presents rather deep *transverse rugæ*, which contrast with the radiating plicæ of the mucous membrane in partial prolapse. The anterior wall will soon draw down with it the reflexion of peritoneum, which you know descends lower on this face of the rectum, and in the protruded serous pouch may be lodged an ovary or a coil of small intestine, as evidenced by the tympanitic note on percussion, or sometimes even by the gurgling of flatus in its tube. The diagnosis between this form of complete and partial prolapse is of vital importance when considering the question of operation.

Partial prolapse is usually recent; it seldom attains a large size; it does not present the firm fleshy feel of complete prolapse, unless it has become œdematous from strangulation or thickened from prolonged exposure, and its surface is marked by radiating lines or creases, which converge to the anal aperture. On the other hand, where all the coats of the bowel are present, the tumour is larger, more fleshy, assumes a conical shape, and is marked with deep transverse folds. A long-existing prolapse will generally be found to be complete. When the protrusion exceeds three inches in length it presents a slight curve, resulting from the traction on its meso-colic attachment, which causes an inclination to either side, or in women to the front, in consequence of the stronger adhesion of the vagina. The orifice at the extremity of the protrusion is narrowed and slit-like—a result also of meso-colic traction; in partial prolapse it is rather circular and patulous. The presence of the muscular coat in complete prolapse explains, by the contraction of its longitudinal fibres, the deeper transverse folds which mark the surface of the tumour. Finally, there is a not uncommon feature in complete prolapse which, when present, constitutes unmistakable evidence of its character—namely, the gurgling of gas in the coils of small intestine present in the anterior peritoneal pouch, which may be felt distinctly in attempts at reduction, as in a large hernia. And from the same cause there is a possibility of sonorous percussion over this part of the base of the tumour, which is said to assume, when coils of intestine are present within it, a spheroidal shape. Allingham mentions that he has met with gurgling in no less than seven cases of prolapse, four of which were women. When two orifices can be distinguished at the extremity of the protrusion—the slit-like orifice of the ileo-cæcal valve and the opening of the vermiform appendix—the diagnosis of invagination commencing at the cæcum is put beyond all question. In such cases a characteristic tumour, of a sausage shape, can be felt through the abdominal wall, which will be found to travel gradually along the course of the large intestine.



COMPLETE PROLAPSE IN A FEMALE, SIX YEARS OLD

(After Cruveilhier).

Peritoneum coloured blue.

That complete prolapse carries with it the peritoneum must ever be borne in mind; and however we might, on anatomical grounds, be inclined to doubt the fact, and with Boyer and Levret to deny that the upper part of the rectum can escape through the anal aperture without displacement of the vagina, uterus, and bladder, one fact is sufficient to counterbalance a hundred theories. We have here, from Cruveilhier's admirable pathological plates, an example of complete prolapse, which distinctly demonstrates the rectum carrying with it in its descent through the anus its two pouches, one in front and the other behind. The anterior one descends almost to the anal verge—the posterior pouch does not descend so low; and yet there is no displacement of either vagina, uterus, or bladder. At first sight it is not easy for an anatomist to comprehend this, seeing that the peritoneum invests a very short distance only—not more than a fourth or fifth of the back of the vagina—and below this that canal is firmly connected to the anterior wall of the rectum during the remainder of its extent. An examination of Cruveilhier's plate would certainly convey the idea that the peritoneum formed an essential part of the entire posterior wall of the vagina, extending to the vulva. This we know is not in accordance with anatomical fact. The peritoneum is adherent as low as the point indicated by the blue dotted line, but the part corresponding to that line has been drawn down, and is simply applied to the parts beneath it, and does not form an anatomical element of the vaginal wall; the recto-vaginal septum has yielded to the strain, and permitted the sliding of the rectum over it in its descent. Mr. Queckett, of London, has described the dissection of a complete prolapse, in which he found the peritoneum investing the protruding bowel.

The treatment of prolapse may be either *palliative* or *radical*. The first intimation which the surgeon receives of the existence of the disease may be when he is called to reduce the protruded bowel. If this be delayed too long the part may become strangulated, and the patient's life brought into jeopardy by sloughing. This dangerous process may terminate favourably and effect a permanent cure, but it is a risk which none would willingly encounter. In the child reduction is usually accomplished with comparative ease, by placing the little patient on its face across the knees, and making the pressure with a warm dry napkin. The introduction of the finger is not desirable, as the bowel usually comes down again when the finger is withdrawn, for which reason Sir C. Bell advises the finger to be covered with a cone of paper well greased on the inside only, by which means it can be withdrawn, leaving the cone in the bowel.

Should this fail, and the necessity for reduction is urgent, chloroform should be administered, the bowel reduced, and the buttock kept closely approximated by plaster and bandage. Leeches to the part are recom-

mended, but I do not consider they are of any use. The division of the sphincter in order to aid reduction cannot be too strongly condemned, as it serves to perpetuate the disease by weakening the natural support of the rectum. If the symptoms are not urgent the patient should be placed in bed or on a sofa, with the pelvis well raised, and an ice bag applied. This will cause contraction of the tumour, diminish the quantity of blood and serum in it, and usually cause its complete subsidence. Many methods have been proposed for keeping the prolapse from returning. A tallow candle may be retained for some time in the bowel; the close approximation of the buttock by broad straps of adhesive plaster, a pad of fine tenax having been laid over the anus after the reduction in the adult. Gooch recommends and figures in his work on surgery a truss fixed in the sacrum behind, and terminating in front in a pad to press on the anus. I have seen much relief and comfort afforded by a pessary of ebonite made pretty full, so as to distend the gut, with a narrow neck and a flange to rest against the anus. In children great attention should be paid to matters of hygiene. The act of defecation should be arranged so as to diminish to the utmost extent the pressure on the sphincter and the liability to protrusion. The child should always be made to have the bowel evacuated while lying on the back on a firm board or table, at the edge of which the vessel should be held, or the nurse should carefully draw the anus to one side while the act is being accomplished. At a more advanced age it should be accomplished in the erect position. It has been suggested by Sir B. Brodie that individuals suffering from prolapse should seek the daily evacuation at night instead of the customary time in the morning, and in this way obtain the advantage of the recumbent position in bed after the action of the bowels.

Such details may appear troublesome, but you have no idea how much may be done by breaking off for as long a period as possible the habit of prolapse. These manœuvres may be assisted by various astringent applications, by injection, or more satisfactorily by suppository—as injections, if sufficiently astringent, are apt to operate as irritants, and to be expelled with force from the rectum with consequent prolapse. I need scarcely enumerate the substances resorted to—*oak bark, alum, salts of iron, gallic acid*. Solid nitrate of silver has been rubbed on the mucous membrane.

Should such plans of treatment fail, and the protrusion become permanent, it is a source of the greatest possible discomfort and of the keenest mental distress to a refined and sensitive nature. The bowel projects on the slightest exertion, even by the erect position. It constantly exudes slimy mucus, stained either with blood or fæculent matter, fouling the patient's linen, and, owing to pain and tenderness, requiring to be adjusted under conditions often most trying and inopportune—a loathsome burthen, which urges the unhappy victim to seek permanent

relief at the hands of the surgeon; and it is a cheering fact that well-directed surgical skill can offer him that relief which he seeks.

I may mention here that those who have suffered from prolapse in early childhood do not necessarily continue to be affected with it in adult age. Indeed I believe the contrary obtains as a clinical fact.

We will now consider the radical or curative treatment of this disease.

Vidal, in a paper on this subject, read before the French Academy of Medicine, speaks highly of the subcutaneous injection of ergotin, and quotes some cases of long standing which were cured by it. A solution of one part of Bonjean's ergotin to fifteen parts of laurel water was injected, 15 or 20 minims at a time, one-fifth of an inch from the anus. The operation was repeated in some cases twenty times. It was followed by acute pain and spasms of the sphincter, but in no case did abscess result from the punctures. We can scarcely hope for any large measure of success for this practice, and few patients would care to submit to so painful and tedious a proceeding.

It might appear a simple operation to follow the method which nature occasionally adopts to cure prolapse by sloughing—and cut it away, a practice which has received the stamp of approval from high surgical authority; but it must ever be borne in mind, that a complete prolapse, *with or without* the sulcus surrounding the tumour, may contain a fold of peritoneum, and its abscission may be *followed, if not by immediate escape of coils of small intestine through the wound, by subsequent fatal peritonitis.*

Radiating folds of mucous membrane may be included in ligatures, or they may be clamped and removed by actual cautery. Nitric acid and other potential caustics may be applied in stripes to the surface. So as to induce subsequent contraction and tucking of the bowel in all these operations, you will do well to avoid the destruction of tissue in the form of a ring or circle around the anus, as it is liable to be followed by stricture.

The radical treatment of prolapse may be accomplished by an operation almost free from danger, simple, and thoroughly effectual. Anæsthesia having been induced, the patient fixed in the proper position, the blade of a Paquelin's cautery, at a dull red heat, may be passed in a series of radiating lines extending over the prolapse for three or four inches; each line should terminate at the junction of skin and mucous membrane. Usually four or five such lines will be sufficient. The size of the blade must vary with the age of the patient; a very fine instrument should be used for children. The prolapse should now be reduced, some ice passed into the bowel, followed in a few hours by a morphia suppository, carefully adjusting the dose to the age of the patient. Care must be taken to avoid straining, and for some time the bowels should be relieved on a bed-pan. The operation may have to be repeated, but usually succeeds most admirably.

The consideration of the third form of complete prolapse, that in which

the finger cannot detect the reflexion of the mucous membrane from the wall of the rectum to the prolapsed bowel, involves an inquiry into the surgery of intussusception or invagination. You may naturally ask the question—What has it to say to diseases of the rectum? I would earnestly impress upon you the very close connexion which does exist between these two departments of surgery. Had they been studied more closely in connexion, so many cases of intussusception would not have died undetected. *Post-mortem* evidence has established the fact that this condition is much more frequent in the child than is generally supposed. The symptoms are so likely to be misinterpreted at this early age, so often attributed by mothers and nurses to teething, inward convulsions, worms, dysentery, and weaning, that the surgeon is very likely to be led astray from the true cause of the appearances which present themselves to his eye. Intussusception in the child is generally sudden in its attack, and runs its course with alarming rapidity. A healthy infant, playing in the lap or taking the breast, is suddenly seized with collapse; it becomes weak, pale, and cold, cries and vomits, the bowels are moved, and then the child strains urgently and may discharge a few drops of bright blood; the abdomen becomes tympanitic. If carefully sought for, the peculiar sausage-shaped tumour may be felt through the abdominal wall, and in a very short time may be detected by the finger passed into the rectum. In a most interesting discussion at the Surgical Society of Ireland, in 1879, elicited by my friend Dr. Corley, it was stated by Dr. Kidd that in a case under his observation the tumour of invagination could be distinctly felt in the rectum *four hours after* the commencement of the symptoms. If this tumour presents the orifices of the ileo-cæcal and vermiform apertures, the diagnosis is complete.

The usual methods of reduction may be resorted to—distending the large intestine with fluid or air, either directly pumped into it, or by the development of carbonic acid by chemical reagents introduced into it, such as bicarbonate of soda and tartaric acid. Attempts may be made to push back the invagination by the long tube, its point being covered with a pad, the child being at the same time placed in the inverted position. Such efforts are rarely crowned with success, and the child usually dies of collapse, or—should it survive—nature may attempt a cure by sloughing of the mass. But we must accept the history of such cases with great reserve, as, although there may be a subsidence of the urgent symptoms, the loss by sloughing of any considerable portion of the alimentary tube is not likely to be followed by any very prolonged continuance of life.

With this hopeless prospect before us, we are naturally led to inquire—Has operative surgery any resource to offer? and when we reflect on the advance which abdominal surgery has made, mainly, I believe, owing to the introduction of antiseptic surgery and the bold practice of

ovariotomy, we call, and not in vain, for its aid; and now it may be accepted as a canon in surgery that when the diagnosis has been established, and milder means have failed, where death must be regarded as inevitable, the surgeon fails in his duty if he does not give his patient whatever chance of life there is in opening the abdomen and unravelling the telescoped intestine—"laparotomy," as the proceeding is now styled. We must be careful, however, not to regard laparotomy as at all comparable in favourable results with ovariotomy. The conditions are as widely different as primary amputation and that for prolonged disease of a joint. To lay open the healthy peritoneum, search among the bowels for the constricted portion, and exercise the force necessary to disengage it, even fortified by anæsthesia and antiseptics, is a bold undertaking, not to be entered on lightly. It is a remarkable fact that peritonitis is rarely met with, and adhesions do not add to the troubles of the proceeding. It may be that the intense collapse is a condition unfavourable to the lighting up of acute inflammation.

In the adult the symptoms are much less acute; the obstruction seldom being complete, the bowels act partially. Here we have more time for observation, and to try remedial methods short of operation; but at the same time we must not allow ourselves to be lulled into a false security by the absence of very acute or urgent symptoms, or permit ourselves to lose valuable time, or place too much reliance on the *vis medicatrix naturæ*. Spontaneous evolution of the foetus is a recognised fact in obstetrics, but who would wait with folded arms for the chance of its taking place in any case of malpresentation. Still less can the surgeon hope for the unfolding of an invaginated bowel by the unaided efforts of nature.

It must be admitted that the statistics of this operation are not very encouraging, but, as in herniotomy, increased success may follow more prompt and decided action. In my student days this operation was most unsuccessful. The unfortunate patient was submitted to a routine farago of most depressing medical treatment; hours of valuable time were lost and patients sacrificed to the delays of the warm bath, enemata, opium, tobacco, and unavailing efforts at taxis by pupils and surgeons. I am glad to say *nous avons changé tout cela*. We can tell almost, by a few well-directed manipulations, whether a hernia is likely to be reduced or not. If not, we at once resort to anæsthesia, on the understanding that if the hernia cannot be returned by its aid the operation is to be completed, the result being—success. We are, therefore, not only justified, but it is our bounden duty to follow the footsteps of those who have advanced into this forlorn hope, and imitate the energy and decision, and hope to attain the success of Mr. Hutchinson and Mr. Marsh, of London, Mr. Sands, of New York, and others, who, by a bold and prompt operation, have rescued the unhappy victims of this fatal accident from inevitable death, and added another laurel in the crown of judicious operative surgery.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F.M.S.

VITAL STATISTICS

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, April 21, 1883.

Towns	Population in 1883	Births Registered	DEATHS REGISTERED			DEATHS FROM SEVEN ZYMOTIC DISEASES							Deaths from Phthisis	DEATH-RATE per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		From all causes	From seven Zymotics
Dublin, -	349,685	887	1027	159	283	-	-	2	-	42	42	14	139	38·2	3·8
Belfast, -	214,022	535	497	82	72	-	-	33	3	21	15	12	86	30·2	5·1
Cork, -	80,124	154	212	14	78	-	3	-	-	-	1	3	27	34·4	1·1
Limerick, -	38,562	98	114	14	43	-	-	-	-	3	1	5	10	38·5	3·0
Derry, -	29,162	71	63	8	17	-	-	-	1	-	1	1	9	28·1	1·4
Waterford,	22,457	52	64	7	18	-	-	-	-	-	4	-	3	37·1	2·3
Galway, -	15,471	34	34	5	15	-	-	-	-	1	2	-	2	28·6	2·5
Newry, -	14,808	20	39	4	9	-	12	-	-	2	-	1	1	34·3	13·2

Remarks.

The mortality continued very high during the period under review—the cold, backward spring telling unfavourably on the statistics of all the Irish towns included in the Table. The death-rate ranged from 38·5 per 1,000 of the population annually in Limerick and 38·2 in Dublin to 28·1 in Derry. It was as high as 34·0 per 1,000 per annum in the sixteen principal town districts of Ireland, while it was 25·8 in twenty-eight large English towns, including London, in which it was 25·2. In Edinburgh the mortality was at the rate of 22·1 per 1,000 per annum; in Glasgow it was much higher—namely, 34·1. In the case of Dublin, if the deaths (28) of persons admitted into public institutions from localities outside the registration district are deducted, the death-rate of the registration district becomes 37·1, and that of the city proper (within the municipal boundary) is 40·6.

The mortality caused by febrile or zymotic diseases ranged from 1·1 per 1,000 per annum in Cork to 13·2 in Newry, where a destructive epidemic of measles is prevalent, causing 12 deaths in the four weeks in

a population of 14,808. In Dublin the zymotic death-rate was 3·8, and in Belfast 5·1.

In the Dublin metropolitan district the births of 887 children and the deaths of 1,027 persons were registered. Of children under twelve months 159 died, against 151 in the preceding period. The deaths of persons upwards of 60 years old rose again from 261 to 283.

The number of deaths from febrile zymotic affections was 118—the same as in the previous four weeks, but in excess of a ten-years' average—viz., 109·8. Whooping-cough and “fever” each caused 42 deaths. The epidemic of whooping-cough, then, continues, but with a slightly lessened fatality, the victims numbering 42, compared with 46 and 53 in the preceding periods. The deaths include 37 of children under five years of age, of whom 13 had not lived for twelve months. The fatal cases of “fever” rose from 35 to 42; of these 22 were attributed to typhus, 15 to enteric fever, and 5 to “simple fever” or fever of ill-defined type. In Belfast scarlet fever, whooping-cough, and fever were all prevalent and fatal. A serious outbreak of measles has occurred in Newry, causing 12 deaths within the four weeks.

Pulmonary consumption was very destructive to life—the deaths rose from 136 to 139 in Dublin, from 66 to 86 in Belfast, and from 19 to 27 in Cork. In the eight towns this disease caused 277 deaths, against 254 in the previous four weeks. In Dublin also diseases of the organs of respiration were extremely rife and proved fatal in 264 instances, compared with a ten-years' average of 193·8 deaths in the corresponding period and with 239 deaths in the four weeks ending March 24. The 264 deaths included 165 from bronchitis (average = 138·0), and no less than 55 from pneumonia (average = 29·1). This last-named malady therefore was nearly twice as fatal as it usually is at this time of year.

On Saturday, April 21, the number of cases of the undermentioned diseases under treatment in the principal Dublin hospitals were as follow—smallpox, 0; measles, 7; scarlet fever, 18; typhus, 78; enteric fever, 9; pneumonia, 21. An epidemic of rōtheln is prevalent in Dublin and its vicinity.

The mean temperature of the four weeks was 45·2° in Dublin, 43·3° at Belfast, 46·1° at Cork, 44·9° at Greenwich, 43·8° at Glasgow, and 44·5° in Edinburgh. These values are all deficient—in most instances to the amount of 2° Fahrenheit.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of April, 1883.

Mean Height of Barometer,	-	-	-	29·992 inches.
Maximal Height of Barometer (on 6th, at 9 p.m.),	-	30·648	„	
Minimal Height of Barometer (on 18th, at 9 a.m.),	-	29·210	„	

Mean Dry-bulb Temperature,	-	-	-	46·9°.
Mean Wet-bulb Temperature,	-	-	-	43·8°.
Mean Dew-point Temperature,	-	-	-	40·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·254 inch.
Mean Humidity,	-	-	-	79·1 per cent.
Highest Temperature in Shade (on 4th),	-	-	-	60·0°.
Lowest Temperature in Shade (on 8th),	-	-	-	34·3°.
Lowest Temperature on Grass (Radiation) (on 8th),	-	-	-	32·2°.
Mean Amount of Cloud,	-	-	-	46·9 per cent.
Rainfall (on 10 days),	-	-	-	2·207 inches.
Greatest Daily Rainfall (on 26th),	-	-	-	1·389 „
General Directions of Wind,	-	-	-	E.S.E., W.

Remarks.

This was a cold, dry month—easterly and south-easterly winds prevailing, although not to such an extent as during March. The mean temperature was 1·6° below the average of the previous eighteen years; but the extremes were not great, the thermometer rising only to 60·0°, and not falling lower than 34·3° in the city of Dublin. The rainfall (2·207 inches) was in excess of the average of the years 1865–82 inclusive (2·047 inches), but nevertheless the month is fittingly described as “dry,” because the rainy days were only 10, compared with an average of 15·5, and of the total rainfall 1·868 inches, or nearly 85 per cent., fell within thirty-six hours on the 26th and 27th. The amount of cloud was very moderate, and much sunshine was enjoyed.

During the first week the weather was favourable, and a marked increase of sun-power was observed. On the night of the 3rd a bright aurora was seen in Ireland and Scotland. On the 4th the thermometer rose to 60° in Dublin, 61° at Parsonstown, and 64° to 67° in central England. Next day the maximal temperature values were 68° in London and 70° at Cambridge. A period of tranquil weather followed, conditions being anticyclonic, with light, variable winds, sunny warm days, and very sharp nights. On the 8th and two following days sea breezes by day and land breezes by night prevailed in Dublin. On the 12th very beautiful cirri were observed from this city, travelling from N.W. at a great height. A perfect solar halo was visible from 9 to 10 a.m. of the 14th, and at 9 p.m. of the 16th a lunar halo appeared, which developed as the night wore on into a magnificent display of paraselenæ (mock moons). This phenomenon was connected with a deep atmospherical depression, which, travelling towards N.N.E. across the British Islands during the 17th and following days, caused a much-desired rainfall in most parts of the kingdom. In Dublin a shower of unusually large hailstones occurred on the afternoon of the 19th.

On the 22nd a return to winter was experienced, particularly in Eng-

land, where falls of cold rain, sleet, snow, and hail occurred on this and the two following days in connexion with a depression tangential to an area of high pressure over Scandinavia, where the barometer rose above 30·70 inches. On the 26th a new and deep depression appeared off the S. of Ireland, bringing with it an acceptable fall of rain. In Dublin an exceedingly heavy downpour occurred on this day and the forenoon of the 27th. Within thirty-six hours 1·868 inches of rain were measured, of which 1·389 inches fell in the twenty-four hours ending at 9 a.m. of the 27th. Intervals of brilliant sunshine on the 28th and 30th gave a great impetus to vegetation, which had previously been very backward.

In Dublin solar halos were observed on the 1st, 7th, and 14th; a lunar halo with paraselenæ appeared on the 16th. Auroræ were seen on the 3rd, 9th, and 24th. Hail fell on the 19th and 23rd. The atmosphere was foggy on the 3rd, 5th, 7th, 8th, and 12th. On the morning of the last-named day a cold and thick vapour fog prevailed.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

DIAGNOSIS OF URETERITIS BY PALPATION.

AT a recent meeting of the New York Obstetrical Society (*N. Y. Med. Journal*, March 24) Dr. Mundé narrated the case of a patient who presented herself last autumn with symptoms of cystitis and pain on micturition. The urine contained pus, with bladder epithelium. A prescription of benzoate of sodium and triticum repens gave considerable relief. The patient complained every day for about a week of severe paroxysmal pain extending from the lumbar region on the left side toward the bladder. Considerable doses of opium were required to relieve pain. Dr. Mundé made the diagnosis of possible renal calculi passing down the ureter, but thought it more likely a case of catarrhal inflammation of the ureter. These symptoms disappeared under treatment, and the amount of epithelium from the bladder greatly diminished under injections. About New Year's Day Dr. Mundé was again called, and found the patient suffering from all the symptoms of acute indigestion, and about ten days later she again complained of pain in the left groin. Repeated vaginal examinations revealed no abnormal condition until January 11, 1883, when, greatly to his surprise, he felt what appeared like a whipcord, of about the size of a goose-quill, running from the neighbourhood of the base of the bladder upward and backward in the direction of the vaginal pouch on the left side. It was exquisitely tender. The patient was still complaining of pain in the left groin. The urine showed

ureteric epithelium and a less amount of vesical epithelium than formerly. Having never before felt the ureter through the vagina, Dr. Mundé asked Dr. Emmet to see the case. Dr. Emmet stated that it was the first instance of the kind which he had seen. They agreed in the diagnosis of ureteritis. Dr. Emmet expressed the opinion that there was vesico-vaginal cellulitis, and that the serous exudation had pressed the thickened ureter downward, and, in order to confirm this view, suggested that the temperature be taken in this neighbourhood per vaginam. The temperature was found to be 103.25° Fahr. It was not taken elsewhere, but it did not seem much elevated.

ALARMING HÆMORRHAGE FOLLOWING EXTRACTION OF A TOOTH AND
NECESSITATING THE OPERATION OF TRANSFUSION.

THE following remarkable case is reported in the *Révue Odontologique* for last month. A soldier, twenty-two years of age, was admitted into the Hôtel Dieu on account of a slight wound in the left thigh, a little above the knee, inflicted accidentally with the point of some scissors whilst he was larking with some of his companions. This was followed by very considerable hæmorrhage, which the military surgeon had great difficulty in arresting. The patient was thin and anæmic. It was afterwards ascertained that several members of his family had exhibited hæmorrhagic tendencies; a brother had died from this cause after extraction of a tooth, and a maternal uncle also of hæmorrhage following a wound with a pitchfork. Not knowing these facts, the house-surgeon, at the patient's request, extracted a carious second molar. This was in the evening of May 10th. The hæmorrhage was slight at the time, but it continued all night, so that the patient filled a wash-hand basin. The blood was of a dark colour, very fluid, and did not coagulate. Next morning the alveolus was plugged with lint and perchloride of iron. This only stopped the bleeding for about three-quarters of an hour, and the plug was changed several times during the day with no better results. On the 12th the actual cautery was applied to the bottom of the alveolus, but it had no effect. Then the socket was plugged with compressed sponge, and the jaws fixed with a bandage firmly applied. Ergotin was also injected subcutaneously. On the two following days no hæmorrhage occurred; the injections were repeated. On the 15th the bandages and dressing were removed, offensive suppuration having taken place; the hæmorrhage at once recurred more violently than ever, and from the sloughing gum as well as from the alveolus. Perchloride of iron, ice, and various other applications, were tried, with only temporary benefit. On the 20th, patient appearing almost moribund, transfusion of blood was decided on. The alveolus was first carefully plugged afresh. About four ounces (100 grammes) of blood were injected into the cephalic vein, and the patient at once rallied. But about three hours

afterwards the bleeding recommenced, and continued, with only a few intermissions, as the result of plugging, &c., until next morning. A second transfusion was then resolved upon, in the midst of which the patient had an alarming attack of syncope, and nearly expired. However, after this he began to mend; the hæmorrhage did not recur; he gradually regained his strength, was discharged cured at the beginning of July, and went through the autumn manœuvres as well as any of his comrades. About two years ago a somewhat similar case was recorded in the same paper. The patient was also a young soldier, aged nineteen; uncontrollable hæmorrhage persisted for six days after the extraction of a molar tooth, in spite of plugging, repeated applications of the actual cautery, &c., and was only arrested by ligature of the common carotid artery!—*The Journal of the British Dental Association*, May 15, 1883.

CHLORAL HYDRATE AS A VESICANT.

DR. RITTER communicates to the *N. Y. Med. Jour.* of March 24 his experience with chloral hydrate as a vesicant. He states that some three years ago he accidentally discovered that when powdered chloral, sprinkled upon ordinary adhesive plaster and melted by a gentle heat (not more than enough to cause the plaster to adhere to the flesh), is applied while warm to the part where the blister is wanted, within three minutes a gentle heat is felt, increasing in intensity for about three minutes more till it is like a burn, then gradually easing off, until, at the end of ten minutes, the parts feel free from pain. The secondary effect is soothing; in some instances within half an hour a second burning is felt, though not so intense as at first, nor so lasting. If, at the end of ten minutes, or as soon as pain has subsided, the plaster be taken off, the surface is found as effectually denuded as by a cantharidal plaster after six hours, though the discharge is not so great. Thus, within ten minutes the work of an old-fashioned blister is accomplished; and the great advantages of the chloral plaster over the cantharidal are:—1st. Its rapidity of action, thus relieving pain, and producing the counter-irritation upon an engorged organ before the congestive action has had time to pass into more than the congestive stage. 2nd. Its ease of application. 3rd. It need never be taken off to have the blister dressed; but the original plaster may remain until the sore is entirely healed, and the plaster loosens and comes off itself. Dr. Ritter says he would have given his experience to the profession before as to the property of chloral hydrate, but supposed it well known. [The employment of chloral hydrate, somewhat as used by Dr. Ritter, was recommended some years ago (*vide Lancet*, 1876) for the relief of neuralgic and rheumatic pains, &c., and has been successfully employed for such purposes by the reporter. Usually the ordinary emplastrum roborans was sprinkled over with powdered chloral and applied to the affected part. When taken off, after the lapse of from 24

to 48 hours, the skin is generally found studded with vesicles. These are to be pricked and a simple ointment applied, or, preferably, the plaster may be left on, as Dr. Ritter states.—ED. PERISCOPE.]

NERVE-STRETCHING.

DR. A. CECCHERELLI (*Lo Sperimentale*, Sept., 1882) has published an exhaustive review of over a hundred papers upon nerve-stretching. In discussing the subject in its physiological aspects, he asserts his belief that the results of the numerous experiments which have been made to determine the extensibility of nerves, and the amount of traction force which they can bear, are not applicable to the conditions existing in the living human body, and so can form no guide to the surgeon in estimating the degree of force which he can use in the operation. The pathological changes which have been observed after nerve-stretching consist chiefly of extravasations and of degenerative changes, affecting either the perineurion, the vessels of the nerve, or the ultimate nervous fibrils. The general effect of these changes is to produce diminution of sensory conductivity without impairment in capacity for motor impulses, unless the traction force is very great, when also disturbances may occur in the nutrition of the nerve and the tissues supplied by it. In what way this effect is brought about is a disputed point—some, with Vogt, referring it to local alterations in the circulation, or the relations to surrounding parts of the nerve itself or its peripheral branches, while others regard it as due to consecutive changes in the cord. The latter opinion seems entitled to the greater confidence, and is held by most observers. One argument in its favour is the bilateral character of the effects obtained after stretching the nerve upon one side. As to the operation itself, it may be done either without incision by forced extension of the limb, or in the ordinary way by exposing the nerve and employing direct traction. The amount of force to be used has excited much discussion. Some lay down the rule that in cases of paralysis moderate traction should be employed, but in cases of neuralgia, tetanus, and contracture, a considerable degree of power is to be exerted. The results of the operation in affections of the nerves themselves—in neuralgias, contractures, and peripheral paralyses—are very favourable. In locomotor ataxia no decisive results have as yet been obtained. In other central nervous lesions the propriety of the operation is doubtful. In tetanus it may do good by diminishing the excitability of the afferent nerves.—*N. Y. Med. Journ.*, March 3.

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